

no. 4.

Field Book
of
Willis Linn Japson.

- 1900 -

The running head in these field books gives the locality for the numbers cited on that page, unless a specific locality is cited under the number.

Giant Forest, June 28, 1900.

= *C. maculata* Raf. multiflora Nutt.
 No. 662. Orchid - *Corallorhiza*.
 Sepals brown; petals brownish, slightly shorter than the sepals, 2 or 3 purple dots on each edge; lip white with pink dots, two sharp ridges toward base and on each side a tooth, this appendage and its downwardly united portion turned upwards somewhat vertically to plane of lip proper. - a condition noteworthy to describe. Column somewhat flattish. Plants as much as 20 in. high. The pericarp ^{in fr.} splits into 6 parts, its three valves, with 3 intervening narrow valves or replum-like affairs. - Common beneath the Sequoias and Firs at Round Meadow. [= *C. maculata* Raf.]

Giant Forest. 1900

No. 663. *Caryophyll. Arenaria macrophylla*
Pine forest, between Old Col. Mill & M. Fork. ^{phylla} ^{book.}
flaccida Greene.

No. 664. *Bryptanthra* with 663.

No. 664a. " " *simulans* Greene. ^(cont. p. 12.)

No. 665. *Linanthus montanus* Greene.
Gorgensley carpets the pine forest floor.
Corolla lobes (pink-red) with dark
spot at base and yellow throat. Color of
petals vary but markings (as to form)
remain much the same. See vol. 3, p. 176.
Colony Mill to Marble Fork.

No. 666. *Hydrophyllum occidentale* Gray.

Stems 25 or 30 from a short rootstock
bearing fleshy tap-like roots.

Stems monostichous, or branching
and bearing 2 heads on the central stem
somewhat corymbosely branched.

Stems ascending - at this time.
Pine forest - Old Col. Mills to Marble Fork.

No. 667. *Vicia* *californica* Greene.
fls. blue-purple purplish

No. 668. *Senecio* *integerrimus* var. *major* (Gray) Cronq.
with 666 & 667

No. 669. *Viola* Pine forest. Round Meadow.
^(Robata Bk.)

No. 670. *Gilia aggregata* var. *bridgesii* Gray.

Corolla scarlet, the lobes spreading
and of such shape as to make a star-
shaped fl. Pine forest floor

No. 671. *Galium*. Fls. white; corolla
lobes 4 or 3; leaves in 4's; perennial!!

Round Meadow, June 28.

No. 672. *Barnassia quamash* Greene.
Fls. dark blue; mostly 1 fl. in anthesis
at a time!

No. 673. *Calochortis*

Fls. ~~pink~~ white; petals rhomboidal, acute.
Filaments as long as anthers or nearly so.
Sepals narrowly oblong, as long as petals.
Gland bilobate, covered by a scale attached
below, shortly frimbriate on its upper edge.
Petals not hairy, $\frac{1}{2}$ in. long. Leaves solitary,
about twice as long as the flower-bearing stem.

No. 674. *Dodecatheon jeffreyi* Moore!
Petals lilac (?) (reddish some), pale towards the
yellow band at base; 4-merous; petals 8
lines long. Peduncles about $\frac{1}{3}$ longer than the
leaves; these 11 in. long or less. Peduncles,
pedicels, bracts, calyx short - pubescent and
somewhat sticky-glandular.

No. 675. *Sidalcea* *ranunculacea* *reptans* Greene.
Staminate flowers 6 lines long; pistillate fls.
 $4\frac{1}{2}$ to 5 lines long, of a darker pink
(reddish brown) than the staminate.

Stems clustered; root crop in woods. See p. 7 infra.
No. 676. *Horachia* *correyi* Hunt! fl. h.
Lotus oblongifolius var. *nevadensis*

Leaflets 9. Banner yellow, the blade
with pronounced auricles at base; keel
and wings white. - Round Meadow.

Round Meadow, June 29, 1900
Giant Forest.

- No. 677. *Allophyllum integrifolium* (Brand) A. & V.
~~*Julia glandulosa*?~~ Fls white,
(not pure white); lobes of corolla
entire; limb $1\frac{2}{3}$ lines broad; fl.
 $3\frac{1}{2}$ lines long. - Pine forest
- No. 678. *Cryptanthus simulans* Greene.
Same as small fl. sp. coll. lower
down. ^{no. 664a.} Corolla 1 line wide or
a trifle over, its throat with a
circle of evident crests partly
closing it.

- In speaking the cones of *Pinus*
Coulteri and their great size Mr
Stone remarked about the long
hooks on the scales: "They were
so that one can stick his finger
under them ^{hooks} and carry them
along."

Round Meadow, Giant Forest. June 29, 1900

- No. 679. *Potentilla* ^{bacca Greene.}
Fls white, with a
suggestion of creaming.
Corolla 5 to 9, commonly 7 or 8 lines broad.
Petals orbicular (sometimes broader
- slightly - than long), 4 lines long on
the average fl. Stamens in 1 row,
22 to 26. - Round Meadow
- No. 680. *Veronica serpyllifolia* var.
^{humifusa Vahl.}
Stems decumbent at base. Corolla
 $2\frac{1}{2}$ lines broad, white, the upper
half with pinkish veins. Upper
lobe largest; middle lobe of lower
lip small; tube inside slightly
hairy. Lower pair of stamens wanting.
See sp. 52 infra.

- Note on *Sidalcea* ... Stems either
erect or with a roostock like a
decumbent base running into the
woody crown. No. 675.

Round Meadow, June 30.

Mimulus moschatus Dougl. var. *longiflorus* Gray.
No. 680A *Mimulus*. Det. A. L. G.

Corolla yellow, finely dotted in throat on lower side, little irregular, the "lower lip largest" but the lobes spreading sub-regular; ^{if and possibly} lobes transversely oblong-elliptic, mostly emarginate.

The 3 lobes of lower lip "appear" on the throat & tube outside as folds or ridges; the lateral ridges or folds approximate and cover the central fold, towards top of tube. Corolla 11 lines long.

Propagating ^{freely} by slender rootstocks (like *Stachys*), the rootstocks often thickened at certain points and thus tubercles. - Moist places, pine forests, Round Meadow

Giant Forest. 1900

Companionship in mules! - away off here in the forest - what a bit of fun we get out of them. That Haster's him to run loose is by day. Yesterday he got out of the meadow at the bar put up between a dead fir stump and a Sequoia. We corralled him and then I put up the bar so that he couldn't get it down. Today after he had finished feeding he hit the "back trail", sidled around camp and made a dash for the bar. He tried all sorts of ways to get over, under and to break it down. It was really a great deal of fun to watch him. Then at last he gave it up, "souballed" as Stone said, and went back to his mate.

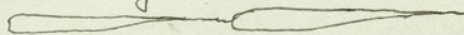
Round Meadow, June 30.

The forest is full of living things and we have much fun with the living creatures. A chipmunk started on a visit to Hoppings supply tent where there is flour hung up; cautiously he approached, chattering away, then as he got near he hopped along on his hind legs and pranced into the tent in the most cavalier style after he saw that the ground was clear of enemies. There are many singing birds, the bark of foxes at nightfall and sometimes the hoarse cry of a larger beast - probably a mountain lion.

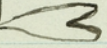
[How will I remember the squirrels cutting of Big Tree cones for their morning meal (Cont. p. 15)]

Giant Forest. 1900.

No. 681. *Stellaria Jamesii*. ^{See p. 52 infra.}
Fls. white; petals deeply notched;
styles 3, distinct. Rootstock
fusiform thickened and the fusiform
portions joined end to end so:



at least I noticed this on one plant
- see spm. - and the tuberos
char. of the rootstock is at
certain points on the rootstock
of all plants. Petals 4 to 4½
lines long: about so in shape

or better:  Pine forest, common.
Petals twice as long as sepals. Stamens 10.
(= 663? + same as Mt. Hamilton plant?)

No. 682. ~~*Brassica*~~ *Arabis repanda* ^{Wats.}

Rare as to individuals: pine forest
No. 683. *Stellaria* ^{sitchana, Steud. var.} ~~*cuspa*~~ *bongardiana*

Flowers white; petals 2-divided; barely
longer than the sepals. (Petals 4; sepals 4;
styles 4, Stamens 8.
Petals 5, Stamens 10 } or some times
styles 3

Round Meadow, July 1, 1900.

No. 684. *Mimulus* - River bed of Marble Fork. Corolla 5-6 lines long. I cannot see the slightest dif. between this and the ordinary *M. guttatus* or *luteus* (ours) as to conformation of corolla. Simply more slender. Date. June 24, 1900.

[Cont. from p. 4. *Cryptantha simulans* Greene, no. 664. Note recurved calyx bristles! Correction of determination.]

No. 685. *Gayophytum diffusum* B. & G. Fls. white. Petals rotately spreading, ^{↑ pure} nearly or quite 3 lines long and corolla 1/2 in. in diameter. Each petal with 2 yellow dots at base. - Common in the pine-creosote forest. These or 1 in. to as tall as spurs taken.

No. 686. *Corylus cornuta* var. *californica* Hazel. Marble Fork trail to Giant Forest.

Giant Forest. 1900.

No. 687. *Mimulus guttatus* DC. Det. A. S. G. Palate exceedingly high and prominent. Sinus in upper lip narrowly V shaped. - Marble Fork, river-side.

No. 688. *Rosaceae*.

Marble Fork "Follies" 5. *Holodiscus discolor* Maxim. var. *microphyllus* Jeps. ^{dumbosa Jeps.}

No. 689. *Alnus* - Marble Fork.

Trees 15 to 25 or 30 ft. h. Bark brown and very smooth; not spotted.

No. 690. *Salix*. Marble Fork river bed.

No. 691. *Gayophytum paniculatum* B. & G.

Plants from River Bed of Marble Fork. Contrast No. 685. Corolla 1/2 as broad and with a yellowish tint at very base of petals.

Marble Fork to Round Meadow.
June 24, 1900

No. 692. *Ribes nevadense* Kell.
 Diffuse shrub, 3 ft. h. - Marble bed.
 274

No. 693. *Phacelia heterophylla* Pursh.
 = *P. griseophylla* (Brand).

No. 694. *Eriophyllum* = "Comm.
Silva eriophyllum coll. prev.?

No. 695. *Convolvulus* ^{*fulcratus Greene, var. Berryi, Jepson.*}
 Marble F. trail to Round M.

No. 696. *Apocynum* ^{*pumilum Greene.*} Side hill,
 under pines. With #695. Leaves are
 pressed in position they assumed
 to prevent transpiration. The opp.
 leaves turn directly downward, back
 to back. The stamens are exserted
 about and over the style as if
 self-fert. were necessary.

No. 697. *Kelloggia galioides*. Corolla
 white, fading pink red, its limb 4 lines
 broad, its lobes linear-oblong, acutish.
 Propagation by running rootstocks!!

Marble Fork to Round Meadow.

- Black oak disappears half-way up.
- *Psilostaphylos Manzanita* = *A. patula* or *A. paniculosa*.
- Deer Brush *Calochortus nuttallii* ^{*var. nuttallii*}
- *Clarkia rhomboides* Nutt.

Plants not taken. See no. 659.

No. 1. *Calyptridium*

Stamens 3; style 1; petals 4, each of
 three with the edges involute about a fila-
 ment, the fourth involute about a
 style. Petals ovate, sharply acute.
 Sepals orbicular, scarious, the
 tip emarginate reflexed ^{the sepals} as if
 bearing a subapical dorsal nectary.
 From plants near Round Meadow.

Doubtless the same as No. 659.

Cont. from p. 10.-

and the way in which these danced to the
 ground. When the squirrels came down the
 great trunk I picked up the finest cones
 as specimens. How surprised I was to
 hear the squirrels scold and rage at me,
 spluttering and running, most vitally
 outraged!

Round Meadow, July 1, 1900.

- No. 698. *Castilleja* ^{kinetorum Har.} - the only
sp. seen thus far. Corolla some-
what curved, esp. near base &
towards end of galea. Calyx
less than $\frac{1}{2}$ as long as corolla;
lip of corolla well exerted.
- Pine forest, Round Meadow.
Calyx lobes bifid.

- No. 699. *Eumulus* ^{minimus (Pursh) Gray} (yellow!) ^{M. nebulosus}
Corolla almost regular but the ^{frons.} ^{at A.D.}
lobes of the lower lip obviously
larger. Throat with prominent
violet-purple markings. Tube very
slender. Plants mostly 1 to $1\frac{1}{4}$ in. high. - 2nd
^{finely & irregularly granulate. See p. 25.}

No. 700. *Galium*

Pine forest, Round Meadow.

- No. 701. *Viola lobata* Benth.

Sheet of individuals all coll. within
1 sq. ft. or about this (except largest
- pin.)

Giant Forest July 1. 1900.

- No. 702. *Pedicularis semibarbata* Gray.
Corolla pale yellow; galea short;
lower lip short, 3-lobed, the middle
lobe largest, from the sinuses folds
run down inside the throat. Lower
pair of filaments woolly on upper
fourth or third. - Pine forest
near Round Meadow, in dry soil.
See p. 53 infra.

- No. 703. *Beaenothus* ^{cordulatus Kell.} "Low Buck
Brush". Branches low spreading
forming flat-topped thickets
seldom more than 2 or 2 $\frac{1}{2}$ ft. high.
Does not appear technically
different from #603.

- Beaenothus* ^{integerrimus. no. 604, cont.} "Low Bush". Hillsides
white with bloom about Round
Meadow. Yellowish-green ^{trunks} -
characteristic.

Round Meadow, July 2, 1900.

No. 704. *Collinsia torreyi* Gray.

Two crests at origin of upper limb, half-sac-like almost with the opening turned toward middle of lip. Two short teeth like processes pointed downward are found at the base of the keel (inside). Upper lip white, lower lip pale blue. Fl. glabrous.
See p. 25 infra.

No. 705. *Gossia*. Petals white, narrowly oblong, acute, narrowed at base to a claw. Stamens 10.

= *Horkelia tridentata* Torr. (*Potentilla congesta* Baill. var. *tilingii* Jepson).

No. 706. *Silene lemmonii* Wats.

Petals white, 4-cleft into linear lobes; subulate appendages

crest 2-cleft, each part with a lateral tooth, standing erect

Giant Forest.

or nearly so in anthesis. Petals recurving in anthesis. Flowers nodding. Pine forest at Round Meadow. As a matter of fact I see little difference between this and the sp. at Colony Hill except in the cutting of the petals.
See p. 52.

No. 707. *Gayophytum*

Fls. white, small, fading red. Petals without spot at base. Otherwise I see no dif. betw. this and no. 685.

No. 708. *Polygonum bistortoides*

Round Meadow. - white with it. Pursh

[No. 661. *Phacelia* L.C. stains paper rusty brown - more than shown on sheet of my spec. *gracilis* ssp. *Nuttallii* (Lohn) Keck

No. 709. *Potentilla* five finger Wats.
Petals yellow, roundish, notched at apex. Stamens 23 about. Root large and tap-root like. Round Meadow.

Round Meadow. July 2.

I have been working here over a week. Seeing the same plants over and over again I find myself looking at certain ones with continually renewed interest, e.g. *Hosackia crassifolia*. Its half-^{or wholly} pendulous fls with their reddish ^{calyces} ~~corollas~~ look at a little distance as if the bunch of whitish corollas had had their tips dipped in some black fluid (ink)

- (see no. 711)
 - *Sarcodes sanguinea* (has a typical Ericaceous corolla with 5 spreading lobes; calyx-lobes as long as tube or urn-shaped part. In
 - *Pteraspandra* ^{andromeda} on the contrary the calyx is only $\frac{1}{3}$ length of corolla or less.

Giant Forest. 1900.

The trail is being continually blocked by falling trees and so one has to go around. One could represent graphically a very crooked trail. I have read somewhere that in Africa the footpaths of the natives are worn hard by centuries of use but that if an obstruction falls across the way, - a rock or a kind - no one takes the trouble to remove it but the path deflects to avoid it.

- (*Fendleri* var. *platycarpum* Thell.)
 No. 710. *Thalictrum* - 4 ft. high.
 Polygamous. Round Meadow.

- No. 711. *Sarcodes sanguinea*
 Round Meadow - under
Sequoias. See p. 20.

Round Meadow, July 2.

No. 712. *Abies* - ^{concolor} branchlet
from young tree.

No. 713. *Hemizonella*
Disk fl. orange. Rays 3, yellow,
 $\frac{1}{2}$ line long or less, 2- or
(3-) notched(?) or -toothed.

No. 714. *Pentstemon newberryi* Gray.
Corolla crimson; anthers
woolly; throat on lower side
covered with short stiff hairs.

No. 715. *Streptanthus tortuosus* Kell.
Annual. Petals whitish, pinkish
veined at tip; stamens all
distinct. S. orbicularis?

Giant Forest, 1900.

- Perfect shower of cones from
the Sequoias in the early
morning - rattling down on
our tent and on the ground.
The squirrels are busy! cutting
of the greenish ones and eating
the seeds out on the ground.
It is a wonder that ever
a seedling comes up. The
grove of seedlings at the
north end of the meadow
comes up from ^{along} the summit
of a fallen Sequoia!

Mr. Stone says that the Gray
Squirrels eat the nuts out of
the 1 yr. old Sugar Pine cones

Round Meadow to Long Meadow,
Tulare Co. 8000 ft.

- Left Round Meadow at 2:45, July 3.
Reached Long Meadow and lost the
trail out of it. A meadow is
a handy place to lose a trail.
Did not recover it until nearly
sundown. So camped. Mosquitoes
here as everywhere else. The
air is very cold; our skins are
ice-cold; but we do not feel
as cold as at Round Mdw.
beneath the Sequoias.

Coming across Long Meadow
Hart Harte insisted on jumping
a creek that he might have
stepped across (as usual) and
then Sierra "pulled back" to beat
the band"; things were very
lively for a space but
the Diamond Linches held out.

July 3, 1900.

Sierra followed suit, i.e. jumped (as
usual).

The *Collinsia* no. 704 is common all
through the forest; it seems to
range above the other one, no. 621.*

- Tamarack galore here at Long Mdw.

Long Meadow to Wolverton Creek:
Chinquapin abundant - *Cercus* emarg.
June Berry.

This is the Fourth of July. We
celebrate by hunting trails, finding
them ~~releasing~~ them.
Mimulus lewisii - by out-torrenting
" *primuloides* in moist spring
[places]

- *Mimulus* ^{no!} *nanus* H. & A. no. 699. See
p. 16 ante.

- * *Collinsia childii* Perry.

Tulare Co.

July 4, Long Meadow,
1900 8000 ft.

- No. 716. *Eriogonum sparganium*
var. *sparganium*
very common on the plateau country
Petals white, notched and a small
tooth in notch. See p. 30.
- No. 717. *Mimulus discolor* Grant.
= *M. montioides* Gray. det. A. L. G.
- No. 718. *Phacelia* ^{*hydrophyloides* Torr.} *decumbens*;
stems sev. from per. root.
Cup-shaped pale blue corolla
Leaves with small lobes.
Pars of scales running parallel approx. up to cor.
at base. Mouth, there acute + adnate di-
vargent. Lobes of corolla revolute on the sides
so as to be "acute" and often recurved.
- No. 719. *Lupinus albus* Dougl.
var. *proximus* Jepson.
Pine forests. Same as "Sordid
White Pine Lupine"?
Color lilac to purplish.
See 3:178 ante.
- No. 720. *Echinosperrum*
Not *Lappula* *nervosa* Greene.
see p. 28.
fls. showy pink; corolla 1/2 in.
broad. Crests in throat like
Cynoglossum! Stems clustered
from per. root. See p. 28.

→ = near Caloon Mdw, 7800 ft.
w. of Mt. Silliman.
to "Camp Berkeley" 1900.
[= near Mt. Silliman. we named the camp
ourselves]

- No. 721. *Linanthus ciliatus* Greene.
- No. 722. *Gilia*, dwarfish with
brown wing stems. *G. divaricata*
Torr. *Navaretia divaricata* (Torr.)
Greene.
- No. 723. *Calyptidium* ^{*spraguei*} *umbellatum*.
Very common on sandy plateaus, mt. sides & stream
beds. often 14 in. broad.
- No. 724. *Astragalus* *Fils. straw-*
color. *Bolanderi* Gray.
- No. 725. *Pinus murrayana* Grex. + Beaf.
- No. 726. *Ribes cereum* Dougl.
- No. 726 A. *Crucifer* *Arabis platysperma* Gray.
Delphinium depauperatum Nutt.
- No. 727. *Larkspur*. fls. sky-blue
sibirica Don.
- No. 728. *Mertensia* *sibirica* Don.
fls. deep blue; very showy. Stems clustered
= *M. ciliata* var. *sternae* ^{prim. a. per. root.} *echinoides* Jepson.
- No. 729. *Pedicularis attollens* Gray.
Describe fls. - See ahead 5 leaves.
See p. 36.

Near Calhoun Mdw., 7800 ft.
w. of Mt. Silliman.
(Camp Berkeley, July 4, 1900.)
= near Mt. Silliman, Inyo Co.

- No. 730. Caprifoliaceae.
Shrub 3 ft. h. *Lonicera conjugialis* Nutt.
- No. 731. *Abies* seedling. Cot. bl. to w.
A. concolor?
- No. 732. Clover. Sandy bed of
Wolverton Creek. *Trifolium monanthum* Gray var. *tenerum* ^{Pursh.}
— *Borago*, no. 720. ^{*Eastwoodianum*}
Fls. change from deep pink to
blue in drying. = *Lappula valutina* Piper.
- No. 733. *Madia filipes*
Typical *Madia* as to fls. & habit. Not
congeneric with *hemizella* but
truly *madia*. Rays 5, yellow, 1/4 line
long, 3-toothed at apex.
- No. 734. *Calochortis* ^{*nuttallii* T. & G.} near
venustus, but flowers smaller.
Petals pure white inside, spot at
base of an ink or blue ink color.
[= *C. leichtlinii* Hook. not *nuttallii*]

Rock line of Sequoia Park.
T. O. Pass, 9400 ft.

Eulophus bolanderi C. & R.

- No. 735. Umbellifer with white
fls. & fleshy tuberos root.
Podosciadium Bolanderi Gray.
- No. 736. *Gilia* fls. scarlet,
Aug. of *G. aggregata* of my
list. Common on the high
country about Mt. Silliman.
- No. 737. *Viola*. fls. yellow, lower
petal largest, veined. = *V. pur-
purea* Kell. var. *pinetorum* Greene
~~*mesophylla* B. & C. ined.~~
- No. 738. *Lotus cupreus* Greene
Nasackia oblongifolia Pth.
= *Lotus oblongifolius* Greene
var. *cupreus* Otley. Banner
yellow, veined; wings white.
- No. 739. *Phacelia* with pinnate
fid leaves. Perennial big root.
P. ramosissima Dougl.
- No. 740. *Mimulus* with red fls.
Mimulus Breweri (Greene) Coville. ^{Small}
Det. A. d. G.

(Near Calhoun Mdw., Tulare Co.,
7800 ft.)
"Camp Berkeley," July 4, To
1900.
= Near Mt. Silliman (westerly from).

No. 741. Clover, dwarf.
(*Trifolium*
monanthum Gray)

No. 742. *Pentstemon* with
blue fls. *P. confertus* var. *caeruleo-*
purpureus Gray. = *P. heterodoxus* Gray.

No. 743. *Hemimella*
Not congeneric with *Madia filipes*. Notice
the habit, the whorl or rosette of leaves at base,
the long naked stems; like certain *Gilia*
and other plants of Middle California. Rays
5 (only 1 case of 4), 2-notched or toothed
at apex, never 3-notched or
toothed. I should say positively that
this is our genus as opposed to *Madia*
filipes.

No. 744. *Mitella* Breweri ^{Gray.} Petals
greenish, lacinate-pinnatifid
into capillary divisions - Camp
Berkeley mdw.

No. 746. *Eriogonum sparganum*?
Very plentiful on the slopes and plateaus
of the high country about Mt. Silliman
between Upper Marble Ford & Camp Berkeley.

North Line of Sequoia Park, July 5
= J. O. Paro, 9410 ft.

No. 745. Violet, fls. white; petals
slender; mdms. *V. blanda* Wttd.
= *V. macloskeyi* Lloyd

No. 746. *Draba*. Petals yellow; stb.
D. stenoloba Ledeb. Not mdms.

No. 747. *Claytonia* (Muntia). Petals
6, slightly irreg. Roots a globose
tuber. Fls. pinkish white.

No. 748. *Ranunculus* ^{*dismaefolius* Gray}
^{var. *alcomellus* Gray} fills the gray
mdms. everywhere.

No. 749. *Aster Andersonii* Gray
~~Gray~~ - William Mdr.
Fls. blue-purple
light.

Tamarack - 3 1/2 ft. in diam.
Dodecatheon Jaffreyi - colors mdr.
Fls. 4-merous.

From Upper Ford of the Marble aux under
from long meadows to the Mt. Silliman
trail we pass over very high country
- at least 9500 ft. *Phlox arvensis* &
Tamarack and sub-alpine meadows

North Line of Sequoia Park

J. O. Raso, Tulare
9410 ft.

- ✓ No. 750. *Guzmania*. Very common in the high ^{slat} woods. ~~*G. asperum* var. *perenne*~~ *perenne* Wats.

- ✓ No. 751. *Dicentra*. Fls. reddish and whitish. ~~*D. formosa* S. B.~~ *D. nevadensis* Eastw.

- ✓ No. 752. *Streptanthus orbiculatus* (*S. tortuosus* var. *orbiculatus* Walp.). ^{Mutallii} Greene.

- No. 753. *Arenaria*. Styles 3. St. 10. Petals white, oblong, acute or long-ovate. Fls. 4 lines broad.

- ✓ No. 754. *Potentilla flabellifolia* Hook. ^{discolor} Grant. det. A. L. G.

- No. 755. *Mimulus*. Carpet the open forest everywhere? ^{= *M. montioides* Gray.}

- No. 756. *Lewisia triphylla* Robt. Petals white, 6 little unequal to 8 or 10! and plainly unequal. Petals nearly 20 lines long. Boulder-strewn country, in the

1900, July 5, to Horse Corral M.

Williams Mdw. = Tulare Co. near n. boundary. S. Fork Kings River, Fresno Co.

fine granite between the rocks ^{pubescens} Cov.

- No. 757. *Aquilegia* fls. cream yellow.

- ✓ No. 758. *Calice Collinsii*, Sq. rd. of it everywhere. Freshens the spring, meadows & forest slopes with the *Mimulus* #755. Color white & "Baby Blue Eyes" Blue. Suggestive of freshly washed and lined school girls: *C. torreyi* Gray. ^{campestris} Jepson.

- ✓ No. 759. ^{Ivesia} *Potentilla* } Petals 4, yellow, obovate & somewhat flabelliform with narrow claw. - Williams meadow also 5' muns. at other end of mdr.

- ✓ No. 760. ^{glandulosum} *Ledum* Petals white. See p. 74. with preced. no. St. 10.
No. 761. *Polygonum* - Williams ^{Rehderii} Greene mdw.

* 763 lost - folder empty
except for meager pocket
fragment.
Horse Coral Mdw. To
South Park Kings River. Fresno Co.

✓ No. 762. *Eutrichium* Williams Mdw.
Allocaarya paniculata Greene & *A. hispida* Greene.
Mimulus coccineus Congdon. det. A.L.S.

✓ No. 763. *Eunamus* Red fl. Corolla
most spec.
Open funnelform; not strongly lobed
irregular; lobes rotate. (only a fragment left.)
no! *M. Whitneyi* Gray (det R.S. 3/5/55)

✓ No. 764. *Phacelia* "circinata"
Fls. blue like the Tamalpais
plant. = *P. heterophylla* Pursh,
form = *P. griseophylla* (Brand.)

✓ No. 765. *Sisymbrium incisum*
= *Descurainia richardsonii* Engelm. ssp. *incisa*

✓ No. 766. *Arabis repanda* Wats.

✓ No. 767. *Mentzelia dispersa* Wats.
Fls. 3 lines broad. Petals nearly
elliptic, yellow, - not orange.
Small orange spot at the base of each petal. Kings Canyon

✓ No. 768. *Saxifraga* - Horse
S. oregana var. *gibbata* not *S. integrifolia* Hook.
Hornell. Coral Mdw.

Summit Mdw., July 6

= *S. saginoides* (L.) Karst.

No. 769. *Alsiné* Summit Mdw.
Leimnaphis Bress.

No. 770. *Pinus monticola* Dougl.
Little Sugar Pine.

Grows to 100 ft into Kings Cañon.
Trunk more like an oak than
any other sp. of pine seen.
Cones borne in clusters usually

No. 771. *Mimulus*, one of Greene's
sp? Corolla altogether like

"*M. guttatus*" but stems
from spreading rootstocks
which bear jointed tubular
rootstocks which are very

fragile and hard to get out of
the soft ground intact.

This is the common *Mimulus*
covering moist places on edges
of meadows, streamlets, etc.
To use Coral Mdw. & Summit Mdw. etc.

Summit Meadow to

Fine view this morning of
Mt. Sierra, Cross Mt., Mt. Gardner
& Mt. King (a very sharp point on
main crest of Sierras) and the
High Sierras.

No. 771. *Minulus* ^{Det. A. L. G.} *Var. corallinus* (Greene) Grant.
L. c. Tidings Regel,
Average spurs but often twice
as long.

-Note on *Pedicularis attollens*. no. 729
Lower lip 3-lobed. The lobes
turned downward and the
upper lip retrocurved over
it. (Fine example of
retrocurved!) Upper lip
nervulate so as to form a
slender tube enclosing the
style, at base enlarged and

King's River basin, July 6,
1900

hood-like, covering the short
stamens. Flowers reddish pink.
The long "beak" of the upper lip
and its curving is suggesting
a triple of "Blue Bells". Calyx
nearly and about equally 5-toothed.
Grows in wet meadows. (King Meadows
Summit mds.).

Five Mile Hill

Sugar Pine - bark of trunk extremely
reddish brown and often deeply
fissured into rather thin
(vertically) longitudinal plates.
Cores typical Sugar Pine
Cores but the trunks are
in some cases smoothish
reddish and not distinguish-
able from Yellow Pine trunks.

Kings River Cañon

(Distinguish in glass in fl. between dot, spot, speckle or blotch.)

- Sugar Pine -

The "carpel" makes the scale in the pine-cone; the bract does not grow, in the flower it is of much the same shape as the carpel scale, a trifle shorter and towards the base of the cone with a short abrupt acute point. The female cones in fl. point upward.

No. 772 *Pinus Lambertiana* Dougl. - Sugar Pine - male.
+ female fls. - Five Mile Hill.

In general Yellow Pines preserve their leaders and at least have or rather retain the youthful,

July 6, 1900

symmetrical top or summit. Sugar Pines on the contrary lose their leaders and send out strong horizontal branches at or near the summit, then becoming patulous.

Sugar Pine cone for book should be drawn showing the ordinary expanded form as one finds them lying on the ground with the scale nearly vertical or perpend. to axis. Little Sugar Pine cone on contrary shows much of the length of the ascending scale.

Mr. Gibbons says lumbermen and woodmen call *Umbellularia* "Cappercowd" in Humboldt. It is truly to be a North Coast Range name.

Valley Floor of King's Cañon

Asclepias speciosa, in fl. See p. 53.*Populus trichocarpa*

Deer Brush in fr.

*Quercus Californica**Pinus ponderosa**Pinus lambertiana**Libocedrus decurrens**Arctostaphylos manzanita***Garrya Fremonti**Cornus pubescens*?

Thicket of *Populus trichocarpa*
at upper end of certain opp.
meadow; trees 10 to 14 ft. h.

* Not likely *A. manzanita*. Possibly *A. patula*? — W.L.G., Oct. 1936.

July 6, 1900

Mr. Upham & Mr. Gibbons tell
me of half-a-dozen groves of
Sequoia biwari in Grant Park and
Horse Corral Meadows; i.e. a
few miles west of Horse Corral
Meadows. Same this side of
Coulter's Creek.

Mr. Upham (of Payot Upham & Co.
S.F.), Mr. Gibbons, a nephew of
Dr. W.P. Gibbons, and Mr. Kale, all
University of California boys are
in the cañon. They have just
come down from Timber Creek,
having failed in an attempt to
get over Harrison's Pass to Mt.
Whitney. Was very glad to meet
them as we had seen no one with
whom we could talk for nearly 3 wks.
They gave us news of the nomination of
McKinley & Roosevelt.

Notes on the Trees.

Saw no Digger Pine in the foothills. Black Oak is strong below the *Sequoia gigantea* belt. From Round Meadow nearly to Long Meadow along the ridge the *Sequoias* were very fine and very large. They were often as abundant as 50 to the 100 sq yds. The largest trees seen in the forest were along this trail.

Shortly before beginning the descent into Long Meadow the *Sequoias* disappeared and we have not observed one since. Beyond Long Meadow after crossing the Marble Fork at the upper ford we began the ascent

Visalia to King's River Cañon

to a high plateau about the base of Mt. Silliman. There were most beautiful subalpine meadows, sparkling brooks and streamlets, gay slopes of yellow *Minuartia* (no. 753) *Caries Collinsia* (no. 758 = *C. parryana*?) and the little *Collinsia* with white fls, small corolla, entire lobes. Elsewhere the wet meadows were full of *Dodecatheon Jaffreyi*. The high wet meadows are often full of a low short thickly growing clover, the head consisting of but 2 flowers (no. 741). It is a very genuine species. I think it has been sent to me at Berkeley to name and I was doubtful of its status. Is it not *T. monanthum*? But I digress.

Notes on the Trees

The Tamarack came in at Long Meadow and "stayed with us" to William's Meadows. On the high plateaus about Mt. Silliman there were two fine *Abies magnifica* and *Abies concolor* Lowiana, the latter being the common tree lower down. Coming down into King's River Cañon we find it exceedingly dry and hot and the trees are those characteristic of the the Black Oak & Yellow Pine belt. See list back several pp.

The change as to dryness from the Sequoia Park country to the King's River watershed is something

Sequoia Park to King's River.

very marked indeed. We camped just below the upper meadows under the North Dome which is a fine piece of rock architecture. Out over the very edges of the cliffs on either side of the cañon the firs and pines stand erect as clings along the walls.

July 7, Saturday

Remained in camp all day drying out plants and building a fire under a kettle of ^{boiling} ~~boiling~~ ^{boiling} which I managed to burn most readily. However I compensated somewhat for this ill-luck by making most tasty and light corn-bread for ~~break~~ breakfast.

Under the North Dome.

Part of hunters camped here. One tells me about two interesting plants growing in the valley. —

— Branching plant, as much as 6 ft. h., yellow flowers from the ground up; grows on the white alkali where "not a living thing else will grow"; cattle eat it greedily; bad smell, rank smell; bees frequent it greedily; great bee plant; blossoms but once in 2 years. This is regular. "Not a smuck of it last year". This year very plentiful. *Wislizenia refracta*.
Spm. 5 1/2 ft. h. sent — Aug. 1900.

— Another plant he describes as ~~growing~~ growing

Saturday, July 7, 1900.

thriftily on the alkali; less than a foot high; grows very thickly; wet in the morning (herbage wet); in the afternoon one can take the leaves and rub the pure salt out into the hand. I take it that this is *Atriplex spicata* Wats. which I have seen very abundant on the lowlands about Main Prairie. (Plant = *Frankenia grandifolia*! - Aug, 1900)

R. H. Fray,
Travers,
Imperial Co. Cal.

Mr. J. A. Boyd,
Travers,
California.

Kings River Cañon

The second name is that of the patriarch of the party. The first plant would fill the need of a bee plant for his region but for its skipping a year in the blooming.

Fair in the party. They have killed a couple of bears, an old bear and a cub, and a deer. I always find such parties of hunters of interest. One of them, around the camp-fire last night, was telling me of his experience in catching buffalo fish with a trammel net in Red River, Texas. (Orange Lake). The fish feed on acorns!!! They do not come out on dry land to get them (!) but the dams grow

Kings River Cañon

thickly about the lake side, the branches hanging over the water, and the acorns falling into the lake. They eat the acorn whole, not shelling it. I thought this a very rare story, to say no more. The trammel net is run out from one shore horse-shoe-shape. Then the fishers in a rowboat slammed or flopped the water with great square pieces of leather on the ends of a pole. The fish frightened by the sound fled out towards the centre of lake and were caught in the trammels of the net. Sometimes a "gar" would get

Saturday, July 7, 1900

into the net. These are 6 to 8 ft. long and with exceedingly sharp teeth. In order to save the net it would be necessary to get around to the front, raise the net up and shoot the gar with a six-shooter. The fish are caught on the principle that they always go forward, at least never back out of a tight place or a net but strive to get through.

- - - -

We have here a steady west wind - the first steady wind that we have encountered. It does not sound like the wind of the higher elevations among the firs but has the steady deep roar of the trades of the Coast Range.

King River Cañon

Cont. from p. 18.

[No. 706. *Silene*, l.c.

House fls. in sheet not taken with spm. There seems to be every gradation from flowers with petals as found at Old Colony Mill (No.) to this, No. 706, which is of higher range altitudinally.

-Note on *Veronica*, l.c. p. 7. no. 680.

Flowers either blue or white, I believe - Summit Meadow, July 6.

-Note on *Stellaria Jamesii* - Dried spm. does not give a good idea of the size or prettiness of the flowers. no. 681.

July 8, 1900

-Note on *Pedicularis* (semi-*umbellata*)

Spikes do not stand erect but are decumbent and more or less hidden by the leaves which are in a spreading radical cluster. One would not notice cursorily that the plant was in flower. No. 702.

-*Asclepias speciosa*, King River Cañon, herbage comparatively green. Common name = creek milkweed. (*A. vestita* = woolly milkweed, which occurs in the foothills.

Kings River Cañon

South Fork.

- No. 773. *Oenothera grandiflora* Lindl.
Stems 2 + 3 ft. h. fls. opening
at twilight; buds (after splitting
calyx) opening in 5 to 20 min.
Remaining open the next
morning until 7:00 o'clock.

O. Hooker
T. J.

No. 773A. *Grignon* ^{for *Grignon* rust} This is labeled "No. 773" on
a field tag. Evidently, duplication of no. and
failure to copy into book. This spm. certainly
from Kings River Cañon floor!! No. 774A =
same species with clearly a doubt.

Lophanthus - Corolla white,
twice length of calyx tube; upper
lobes emarginate, erect; lateral
lobes of lower lip short + lateral
and so rather inconspicuous;
middle lobe rather broad and
somewhat truncate, closely
reflexed. Calyx teeth broadly
subulate, lilac or pink
tinged. Stamens long-exserted.

(Something to be made of this
in Key.)

Monday, July 8, 1900.

- *Brickellia vulgaris*. Upper lip 6
calyx with 3 short broad
cuspidate teeth, the whole
upper lip rather exceeding
the lanceolate teeth of the
lower lip. Corolla upper lip
broad and erect; lower lip
spreading.

(*Lotus douglasii* (Greene) var. *new-*
adamsii Otley.)

- No. 774. *Hebea* Buds
dark-red, yellow fls. in
anthesis, but the outside of
the petals dark-red and so
the faded fl. dark-red.
Stems spreading over
the ground. - Dry bed of the
Kings Cañon floor.

No. 774A. *Amelanchier* ^{*alabamica* Nutt.} This spm. was
only labeled on field sheet "No. 774, June Berry"
but was missed in copying into book - Sept. 21, '01

Kings Canon, July 8

No. 775. *Mimulus* ^{Lagneal (Fresno) Jepson.} in dry ^{Det. A. S. G.}
sandy soil

No. 776. *Alnus* ^{tenuifolia Nutt.} Same as in
Marble Fork.

No. 777. *Euphorbia*. Dry Sandy
Soil. = *E. serpyllifolia* Pers.

No. 778. *Cichoriaceae*. ^{*Crepis acuminata*}

Trail to Butte Creek, in
the rocks.

Aquilegia chrysolepis, with
small leaves, entire or
spiny. On talus in Kings
River Canon and on the
face of the North Dome
apparently quite to the
summit in rock crevices

Kings Canon, July 8, 1900.

Pinus monophylla - junction
Butte Creek & S. F. Kings R.

This morning we had our first
great disaster. We left camp
beneath the North Dome and
started for Butte Creek. On
the steep hillside below the
cascades where the trail
is exceedingly rough the
mules got excited. We rested
them at intervals, but the
trail is very steep, all
rocks. much of it rock-
slipping because of loose
rock on smooth surface
and the mules tried to do
too much. We rested them
at intervals but perhaps

Buffs Creek Trail.

sent them along too fast. In any event we found tight places on the trail - where the packs would just go through if the mules hit the middle - which they didn't. This excited the mules in addition to the steepness of the trail, which is very steep and very rough. Hot Haste finally got through and then Sierra bumped against a tree stump that had troubled Hot Haste, and bumped again. Then he pulled back. I called to Stone to unloosen Sierra from Hot Haste which he did after some trouble. Then I took Sierra and led her behind. Hot

July 8, 1900.

Haste. The trail was so abrupt that she came up with a rush, tried to crowd past Hot Haste and in so doing got her hind legs off the narrow trail; she attempted to jump back but the loose rock simply gave down beneath her and she had the appearance of jumping up and falling over backward down the precipitous slope. Over and over she went down and down, a most terrible and almost sickening sight. I hardly had made a step down the mountain when I noticed that quite a mule train was below us. Across the trail below Sierra went, nearly colliding with

Bubb's Creek Trail.

one of the party below. The poor mule 25 further down turned her feet against some rock as she rolled over the last time and so hurt herself. Mr. Olney who was of the following party came to my help and loosened the cinch and so we got the pack saddle off. All the way down the hill was strewn our belongings. Most of it lay near the bleeding mule but up the hill were blankets, bags, the first volume of the History of California with the pages icy. fluttering in the wind, corn meal

July 8, 1900.

bag, lining bag, dried prun bag, canvas coats, Winchester Repeating Shotgun, my extra pair of hob-nail shoes, a fry-pan (much the worse for the descent), a hatchet, a bag of tin plates and dishes - and in short those necessities with which the mountaineer provides himself. Strangest of all, stranger almost as a miracle, the mule was scarcely more than scratched over the body in various places, excepting merely a skin-cut on the hind leg. How she escaped I cannot understand. She fell about

Bentley Creek Trail

80 feet over great jagged rocks and boulders from half-a-foot to three or four feet high. Nor was it so much the distance of the fall as the abruptness of the slope of the mountain.

It is also a wonder that she stopped rolling where she did. Below she might have gone with greater rapidity for 200 feet or more. I presume that in reality the heavy pack saved her body and rides and when her feet came around she could use them to help save herself. The front part of the saddle tree

July 8, 1900.

was broken, the canvas straps injured by some of the shapes pulling out - but not seriously. My bottle of ink was broken. When I opened the bottom of the bottle was out but a ^{tray, the} little ink was in the neck of the bottle which was upside down! This I promptly transferred to my style, where the ink is getting low.

As a matter of fact we have come out of a serious adventure very luckily. And we trust we shan't have another such one!

— On the way up as we were crossing the South Fork on the Litchie bank we met J.N. Belmont and Miss Gumpert. In order to get our animals

Bubb's Creek Trail.

across I had taken off my
 shoes and stockings and
 rolled my overalls and
 trousers half-way above
 my knees. Maybe I looked
 like a courtier of old with
 his flushed cheeks. Anyway
 I marched out into the
 bank into the presence of
 these people. I was not at
 all abashed but pulled down
 my wet garments, bowed
 to their gumperts and shook
 hands with LeConte. But was
 it not just a bit strange,
 this coincidence in these
 remote wilds! If not this
 why not things which have
 more significance and

July 8, 1900.

which I have thought so
 improbable as for instance
 the meeting of the wrecked Puy
 with the English Buccaneers
 on the shore on the Virginian
 coast, in "In Days and To Hold",
 the opening chapters of which
 I have just been reading?

— — —
 The Gold Leaf Oak is common
 at this alt. on the mountain
 sides as a low bushy tree
 20 or 25 ft. h. or less.

"*Gymnocarpus cordifolius*, in
 fruit; pods 5 inches long.
 Peduncle erect, pedicel reflexed
 or recurved, pod erect.

Bubb's Creek Trail.

Pinus monophylla - does not look like a pine on account of its solitary leaves. It had to me at first glance the appearance of some Australian tree with narrow leaves, or reminds me of the Podocarpus things or even of Casuarina. I am familiar with Australian trees since childhood but not till now have I seen *Pinus monophylla* close at hand and living. Mr. Stone says the trees look like apple trees - they are so low and branching and round-topped.

July 9, 1900.

bottom of Bubb's Creek.

Amygdalus Nelsonii - trees 25 ft. h.

Amygdalus chrysocarpa - common on the talus and running up the very faces of the high cliffs to the summit.

Storackia Torreyi. The 4 or 3 pods in ripening divaricate (in one plane) more or less horizontally so that they form a semi-circle.

Juniperus asper

Chenopodium album. Bubb's Creek trail over Kaarsarge pass an old trail - used for packing supplies to Independence in early mining days.

Bubb's Creek Trail

circa 7500 ft.

I was told by Mr. Gremke, an Oakland artist stopping in Kings River Cañon, that the first cabin in the cañon was built 30 years ago. He showed me the ruins of it at the spot where it stood.

Camp Relief. - After the "disaster" we camped two days at the first meadow above the junction of Bubb's Creek and Kings River, S. Fork.

Fresno Co.

July 9, 1900.

No. 779. *Geranium richardsonii* ^{F. & T.}
Springy places, - also seen at Round Meadow. Petals 7 or 8 lines long, lobate, clawed at tip often more or less truncate, purplish veined, soft hairy at base. Root fleshy, rounded with several short rootstocks which bear the annual stems and give rise to another one the next year. By a terminal bud.

No. 780. *Polygonum douglasii* ^{Greene}
gracilis (Smith) Reck

No. 781. *Madia*. fls. whitish (no yellow); calyx 2 lines long or a trifle more.

Agastache verticillifolia Bth.

No. 782. *Lophanthus* fls. described previously. See p. 81.

Bubb's Creek Trail

Fresno Co. circa 7500 ft.

No. 783. *Mentzelia congesta* B. & G.Flowers golden yellow - not
nearlyorange like *hildleyi*. Corolla

3 1/2 lines broad. Petals abruptly

acute, the ~~middle~~ somewhat

pointed backward and

conuplicate. Bracts

white! with green tips.

Lower leaves pinnatifid.

No. 784. *Trifolium wormskgoldii* Lehmann
(var. *fimbriatum* (Gray) Wats.)

Perennial by running rootstocks.

Flowers in color, aspect, size

of head = tridentatum.

No. 785. *Cirsium* ^{*drummondii*} Plant cut

off at ground. Spm. with 2

radical leaves. See p. 80 infra.

Bubb's Creek. July 9.

Fresno Co.

No. 786. *Salix scouleriana* Nutt.
Willow. Slender trunked
trees, 30 ft. h. or less; bark
light gray, scarcely checked
on the oldest parts.- *Populus trichocarpa* - bark
light-col. but much yellow
in -No. 787. Willow - tree, 12 to 16 ft. h.
*longipes goldii*No. 788. *Stellaria* Coll. also at
Round Meadow? Yes.No. 789. *Pentstemon bridgesii*
Gray. Fls. ~~or~~ *crimson*. Abundant
and showy on the talus. Upper lip notched
cf. p. 96. ^{also along Bubb's Creek.}

Bubb's Creek
(Camp Relief)

circa 7500 ft.

July 10

Stone notices the Birch* here
and the Juniper. It is
worth noting that the
Birch and the Kellogg Oak
touch hands here.

Plenty of Cherry* & Low
Buck Brush*
(Bitter *Ceanothus emarginatus*)

No. 790. *Gracifera*. Annual!

No. 791. Umbellifer. Four ft. h.
Dry soil. Several stems from
same root (2, 3, 4). *Angelica*
lineariloba Gray.

No. 792. Gooseberry. *Ribes amictum*
Greene.
Diffuse shrub, 2 or 3 ft. h.
= *R. roezlii* Regel, not *R. amictum*.

* *Betula occidentalis*.

* * *Ceanothus cordulatus*.

Bubb's Dome, July 10.

fine Aspen trees, straight and
tall as Lombardy Poplars - 60 ft.
high. *Populus trichocarpa* with
them.

No. 793. *Lichariaeana*, dry rocky
drift. *Crepis intermedia*

No. 794. Fls. yellow. Umbellifer.
Cymopterus terebinthinus T. & G.

No. 795. *Senecio Covillei* Greene

No. 796. *Gingern* ^{cultured} *Antennaria*. Rays 60 or
more. Meadows.

No. 797. Blue Spike Lupin.
Meadow. *Lupinus pratensis*
Heller.

No. 798. Cherry. *Prunus emarginata* Wabp.
Very common
on the rock talus Bubb's Creek R.
6 or 8 ft. high.

Meadow near the

- I observe here the *Ericaceae* shrub, no. 760, which I coll. at Williams Meadows. I notice one flower with 6 petals and 12 stamens. The shrub is $1\frac{1}{2}$ to $2\frac{1}{2}$ ft. h. with stems decumbent at base. It is undoubtedly a *Sedum*.

- The Aspen & Poplar growing close together, one ^{Black} at little distance is at a loss to distinguish which is which sometimes, but let the wind stir ever so little - then there is no confounding them!

South Fork of Rabbit Creek

No. 799. *Caryophyll. Silene*
menziesii. On talus.

Petals white, somewhat fan-shaped, truncatish, crenulate, trifid, vestiges of clefts at base of blade, Blade 2 or $1\frac{1}{2}$ lines long.

No. 800. *Solidago*.

Ray 8 to 13, deep yellow.

No. 801. *Senecio triangularis* Hook.
var. *trigontophyllus* (Arcene) Greene

Ray 5 (6 or 7), golden yellow.

No. 802. *Cloraz*. Wet meadows
Corolla red-purple, the parts
tipped with white.

Related Notes

Our disaster proved very lucky if one may speak of a lucky disaster. Stone took Hot Haste to the top of the grade, unloaded him and came back for Sierra's load. Hot Haste decided to be surly about this time and most of the load was taken up to the top on our backs. The damages were quite easily repaired with buckskin and the point of the saddle was mended with copper wire which was given me by Mr. Gals who came into our camp for the night. His companion was Mr. ~~to~~. I neglected to

July 10, 1900.

note that I met Prof. Helms with J. R. Le Conte and that he told me had been everywhere that he could go on horse-back, even to the top of Kearsarge Pass.

Our tinware suffered most from the accident, the pans and plates being as severely banged up as if they had experienced a cyclone. The bottle of whiskey was not broken but in bringing it up to the camp the cork joggled out and we lost the contents. My slender fragile comb was not broken but other stranger things were.

That night I hobbled Hot Haste and out of sheer pity

Related Notes.

for the bruised mule, skinned and bleeding, I left her alone. Early next morning she led the hobbled hot chase down the trail - homeward! - over that terribly rough rocky path! It took us until 12:30 that day to get them back to camp. "Are things what they seem"? My sympathy for the poor mule and her terrible fall was undugue something of a reverse.

Butte's Creek, July 10.

occidentalis C. & R.

No. 803. *Oxypholis*. Often much taller and more branching.

No. 804.

Corolla dark blue, each petal with two prominent hairy glands at base.

No. 805. Maple. *Acer glabrum* Torr.
Six or 7 ft. h. On talus.

No. 806. *Cryptantha* | *celimella* Greene
Corolla $\frac{1}{4}$ lines broad.

No. 807. *Lotula occidentalis* Hook.
Birch. 15 ft. h.

Bubb's Creek

Fresno Co.

No. 808. *Apocynum pumilum* Greene.
Very showy in open places
in brush on talus.

-Note on *Cirsium* no. 785.

Noticed as common in
the rock drift near streams
at junction South Fork of
Bubb's Creek. Stems even
shorter than in specimen
taken, sometimes 3 or 4
forming a low round
plant, the heads congested
in the center of the rosette
and none in the axils. Leaves
even spines and with
smaller lobes so far as
green texture is con-
cerned.

July 11, 1900.

-Note on *Lophanthus*. First indiv.
going up Bubb's Creek (Camp
Relief). Meadow full of it. No. 782.

No. 809. *Senecio fremontii* var. ^{*distachis* Gray} occi-
junction Bubb's Creek and S. Fork
of Bubb's C. Rays 7 or 8.

No. 810. *Pentstemon*. Blue one,
caespitose, moist borders of
meadows, in sand track.
P. confertus var. *caeruleo-purpureus* Gray.

No. 811. *Asteraceus*? No. *Arnica*.
Near S. Fork Bubb's Creek

No. 812. *Arabis Holboellii* Hornem.
Annual. Near Charlotte
Creek. = *A. rectissima* Greene.

Meadow under West Vidette,
9000 ft. Bubbs Creek,

No. 813. With preceding.

- No. 814. *Phacelia* ^{*ramosissima* Dougl.} With preceding. Corolla with rotate pale blue limb. Conspicuous free crest running up to mouth of throat. Purplish spot in throat behind each stamen. Same as no. 739. coll. near mt. Silliman.

- No. 815. *Fraseria speciosa* Dougl. Five ft. h. on rocky hill side, head of Bubbs Creek, under West Vidette. Corolla $1\frac{1}{2}$ in. broad. Petals ovate, acute, greenish, purple-dotted ^{and} with two long glands below

July 12, 1900. Fresno Co.

middle. The glands are concealed by a dense fringe of hairs around margin, projecting over and above gland. Each petal also with lacinate or fringed appendages at base. Plant unbranched, flowering nearly from the base. Leaves in a whorl 5. Peduncles 1 flowered or bearing a cluster of 3 to 7 pedicels.

- ^{*oreophilus*}
No. 816. *Symphoricarpos* With preceding. Corolla $3\frac{1}{2}$ lines long, somewhat yellowish or pale, tinged outside with red, sparingly hairy in tube about base of adnate stamen filaments. Corolla tubular funnelform.

Meadow under West Vidette,
9000 ft. Pueblo Creek, Fresno Co.

No. 817. *Senecio canus* Hook.
Dry rocky hillside, West
Vidette. ^{C. sp.}

No. 818. *Castilleja* (or *Ortho-*
carpus?). Wet swampy
meadow, West Vidette

See description ahead. [p. 108.]
C. culbertsonii Greene.

No. 819. *Epilobium oregonense* E. Hauss-
kn. Meadow below West Vidette.

No. 820. *Gentiana holopetalala* (Gray) Tolm.
~~*G. serrata* var. *holopetalala* Gray~~

July 12, 1900.

Fresno Co.

No. 821. *Dodecatheon alpinum* Gr-
eene. With preceding.

No. 822. *Veronica*
Flowers blue. With #821.

No. 823. *Antennaria*
+ with #822

= *Ivesia pygmaea* Gray
No. 824. *Potentilla* (*Horkelia*)
Stamens 10; fls. yellow. In
rock crevices under West
Vidette. *P. gordonii* Greene var. *pyg-*
mala Jepson.

No. 825. *Pentstemon newberryi* Gray.
Crevices of the rock, on rocky
slope of West Vidette.

Meadow under West Vidette, Bubbs Creek.
9000 ft. Fresno Co.

No. 826. *Polygonum kelloggii* Greene

Petals 5; ovate, acute. Rose-purple. With #819

No. 827. *Antennaria*

No. 828. *Antennaria*.

These two with #819.

No. 829. *Fragaria* ^{*platypetala* Rydb.} ^{*virginiana* Duch.}
With #819. ^{*var. abbaldi* folia} (Rydb.) Jepson

No. 830. *Pinus albicoulis* Engelm.

Smooth white branchlets, the
bark not leaving a raised
scar. Leaves 5, not whitish
inside. Often depressed trees
with trunks sprawling over

July 12, 1900.

the rocks. Male flowers of
purple cones. Female cones of
large blunt thick scales; cone
2½ in. long. about. I have not
seen a perfect one. See p. 91, also
94.

Mr. Gals notes the dead
Tamaracks here* and asks
why there should be so
many. He speaks of the
dead Tam. in Jack Maini
Canyon above Hetch Hetchy
called the "Dead Forest".

* Under West Vidette

No. 831. *Juniperus occidentalis* Hook.

Upper Bubbs Creek.
Assuming characteristic
form.

Upper Publis Creek,
9000 ft.

Camped at the meadow under the West Vidette. We are surrounded by some fine peaks and cliffs. The East Vidette is a splendid peak and the view of it is particularly fine about sundown, when the lights strike horizontally on its sides. University Peak is in view from here. The Kearsage Prineales stand out boldly and attract the eye always. Around the meadow are Lamarack trees 50 to 75 ft. h. and mostly 1 to 2 ft. in diameter (but some larger and many smaller). On the rocky slopes about is an

Thursday, July 13, 1900.

abundance of *Tunga Pattoniana* (#832). The meadow is rather swampy, rather close-cropped by the animals of the various parties that pass along the trail, spotted with patches of yellow (*Minulus primuloides* Benth.). We saw two woodchuck in the meadow and afterwards saw one that had been shot. They were brown, fat, low, broad animals with short noses, and much larger than I supposed woodchucks to be.

Upper Bubbs Creek, 9000 ft.

No. 832. *Tsuga mertensiana* Bong.
Pattersoniana.
Mostly small trees under
12 ft. but some trees go to
50, 60 or 70 ft. with trunk
4 ft. in diameter. The
branchlets are drooping and
the trees more or less 1-sided
with unequal branches.

No. 833. *Pinus Balfouriana*
Largest trees 45 ft. h., perhaps
50 or 60. Trunk 2 to 5 ft. in
diam. Also many smaller
trees. Trunk of the large
trees commonly with short
stubbed branches (well
clothed with foliage) well
towards ground (3 or 4 ft.). See
p. 94.

Under West Idette, July 13.
G. Remo Co.

The trees show evidences of
their subalpine habitat. The
leaves clothe branchlets very
densely and the branchlets
are suggestive of fox tails.
Leaves in 5's. The needles of
a bundle do not spread or
diverge; are very white
beneath with stomata.

-Note on *Pinus albicaulis*. Trunks
often much depressed. Leaves
in 5's (or 4's), somewhat
spreading, longer than the
preceding, not white beneath
with stomata. No. 830.

Upper Publics Creek, 9000 ft.,

- The best meal, according to my idea, for making bread in camp, is corn-meal. My success has been with that and not with flour. One needs however a little white flour to make corn-bread moister - it is likely to bake very dry. In camp one has no eggs or milk. Whole wheat ought to work well but I have not tried it. We find Shredded Wheat Biscuits a delicious luxury. We have one package! *all there was room for!*

Under West Vidette, July 13.
Pitkin Co.

The wind has been blowing steadily from the west all day. At night there is some little gustiness from the east. The mosquitoes trouble here in the morning and evening in spite of the cold and probably 10,000 ft. elevation.

Upper Bubbs Creek,

No. 833. *Pinus Balfouriana* ^{Griseb. & Balf.}
 Bundles leaving raised scars
 on branchlets. See p. 90.

-Note on *Pinus albicaulis*. No. 830.
 Branchlets on some portion of
 them constricted at short
 intervals. One thinks of
 moniliform but could not
 apply it here, hardly. This
 constricting is not always
 found but is common
 enough to be characteristic.

Under the West Vidette.
 Fresno Co., 9000 ft.

-Party with pack train came
 down the trail from Kearsage
 Pass, over from Independence.
 Looked like "Old Stagers". No
 dallying on the trail with
 them. After a short talk,
 they were on and out of
 sight instantly.

Sierra stood with her tail
 to the Sierra snows this
 morning, her body perpendicular
 to the Sierra axis!! It was
 a bitter cold night and in
 the early morning I saw
 her immovable silhouette.
 Then when the sun's first
 rays came over she drifted
 around instantly like a

Upper Bubble Creek, Fresno Co.

weather ranc and presented her broadside to the sun's rays. We too, were glad of the sun and quit shivering when the sunlight came over.

[Cont. from p. 71.
No. 789. *Pentstemon Bridgesii* Gray.
Upper lip shortly bifid, erect;
lower 3-parted, the lobes recurving. Stamens sterile filament globose. Upper lip somewhat concave-galeate.]

No. 833. *Pinus Balfouriana*.
Trunks reddish. Cones more or less clustered. Trunks rather deeply fissured into oblong areas. Branchlets drooping!

Saturday, July 14, 1900.

-Worst bit of trail on whole route from Visalia via Millwood to Independence said to be at mouth of Bubble Creek. I can well believe it. Still it is an old-traveled trail. Parties of prospectors with pack animals still go through. Yet so long as an animal can squeeze through a hard place they will not make it any better.

Patton's Spruce. Cones singly (terminal or lateral) or in whorls of 3.

Upper Bubble Creek,

Took the up trail to Bullfrog Lake.

Plenty of ^(Bush) Chingnapin; depressed.

No. 835. *Streptanthus gracilis* ^{Eastwood}
Calyx purple. Petals light purple and veined.
On disintegrated granite.

No. 836. *Senecio*?

Ray about 10, golden yellow.

No. 837. *Calyptridium umbellatum* ^{Sprague}
Fls. white. Sepals with a larger herbaceous spot than in No. 723.

No. 838. *Hieracium breweri* Gray.

Fresno Co.

Saturday, July 14, 1900.

Bullfrog Lake, 10,634 ft.

No. 839. *Bryanthus Breweri* ^{Gray} ~~Gray~~
^{= *Phyllodoce*}
Petals rose-color; tip revolute from apex.

No. 840. *Epilobium* ^{(*Oregonense*?) Hausskn.}
Corolla $2\frac{1}{2}$ lines broad, pink; petals notched.

No. 841. *Rumex* ^{*salicifolius* Weinm.}
^{var. *montigenitus* Jepson}
Shores of Bullfrog Lake.

No. 842. *Phleum alpinum* L.
with No. 841.

No. 843. *Sagina dimorpha* ^{= *S. saginoides* (L.) Karst.} ^{Gray}
Petals 5, ovate, white, $\frac{1}{2}$ line long, shorter than sepals; stamens 10; stigmas 5.

Bullfrog Lake, Fresno Co.
10,634 ft.

Flower 1 line broad. Prostrate
or ascending. Moist rocky
banks of Bullfrog Lake.

Sagina saginoides (L.) Karst. &
No. 843a Same as #843?
in fruit.

Timber line - about 11500
feet; as trees 10000, but
smaller forms of the same
species of conifers above.

About Bullfrog Lake -

Tamarack, *Balfouriana*
+ *albicaulis*. ^{↑ Pinus}

Herbs: *Minulus* prim-
uloides with very small
flowers. *Pentstemon*
confertus - often only 1 whorl.

July 14, 1900.

No. 785. Observed this again
as an accumbent plant.
Leaves in a great rosette
2 ft. wide, with a cluster
of heads in the center. Also
some ^{↑ sessile} proligiform stems from
beneath the central one.

No. 844. *Eriogonum incanum*
Straw-yellow flowers

No. 845. *Antennaria*.

No. 846. *Potentilla breweri* Wats.
var. *viridis* Jepson.

No. 847. [✓] *S. aprica* Greene, not
Saxifraga nivalis L.
Petals white. Pistils soon
becoming red. Petals ovate
with a very short claw. Fils.

Bullfrog Lake, Fresno Co.
10,634 ft.

3½ lines broad! (I notice
one fl. with 6 petals & 12
stamens, but 2 styles).

Shade of rocks, north
slope, under Kearsarge
Pinnacles. = *S. aprica* Greene!

No. 848. *Saxifraga*, *Bryophora* Gr.
Kearsarge Pinnacles, in
moist places between the
rocks.

No. 849. *Sedum Rhodiola* ^{DC} ~~Benth~~
Kearsarge Pinnacles. = *Rhodiola*
~~rosea L. var. integrifolia Jepson.~~

No. 850. *Ranunculus oxynotus*
In moist shade of Gray
rocks, with no. 848.

No. 850a. *Gayophytum nanorissim-*
um J. & G. Bullfrog Lake.

July 14, 1900.

No. 851. *Salix* ^{*oestera* Schm.} ~~*glauca* var. *villosa*~~
and. Highest willow; runs well
up on the mountain sides
above the Lake as a low
shrub. Is a feature of the
landscape above Lamarack.
Pinus Balfouriana, but with ^{*albicansis*} T.P.

No. 852. Alpine *Pentstemon*
with blue fls. Kearsarge
Pinnacles (and ^{also Kearsarge} Pass.)
P. davidsonii Greene.

No. 853. *Primula suffrutescens*
Fls. crimson; throat yellow.
Petals notched. Shade of
rocks or edge of boulders.

Bullfrog Lake, 10,634 ft.

-Up the north side of the Kearsarge Pinnacles there is nothing but *Pinus albicaulis*. I hoped to find some perfect cones but there were only husks sticking over the tops of the trees. The brown squirrels have been ahead of us; - this was also the case down below. Great skeletons of trunks sprawl over the ground on rather great granite rocks, 2 ft. through, gnarled and twisted or bent into dragon-like shapes. Leaves in 5's (or 4's). Great trunks white

July 14, 1900.

with narrow transverse black markings.

I notice a Foxtail Pine trunk checked almost like a Valley Oak but the checks larger.

We are now in camp near the crest of the Sierra Nevada. The air has a forbidding look. Destitute of trees and with not a sign of herbaceous vegetation - as seen from camp - the black and white ashy mass of Mt. Gould and the ridge generally looks not unlike the scenes of

Bullfrog Lake, 10,634 ft.

painters who picture from their imagination and reduce into oil the infernal regions.

- The best, quickest and hottest fire ^{is to be} made from ^{↑ at this altitude} the dead limbs clothing the base of *Pinus albicaulis* bunks and which can be snapped off readily as needed.

No. 854. *Gilia*.

Kearsarge pinnacles.

The trees here are all more or less bent easterly by

July 14, 1900.

the wind, or at least the branches, if not the main trunk. Looking up toward Kearsarge Pass one sees a great proportion of dead branches; probably many of them represent dead trees.

No. 855. ~~*Gilia*~~ *Erigeron*
petiolaris Greene

No. 856. *Polygonaceae*.
Oxyria digyna, Benth.

- Sides of Kearsarge Pinnacles glacier shaven, marked very plainly.

No. 856a. *Leptodactylon pum-*
gens (Torr.)

Bullfrog Lake, July 14, 1900.
10,634 ft.

[No. 818. *Castilleja*. See p. 84.

Calyx - lobes bifid.

Corolla much protruded and turned downward between lower cleft.

Lower lip somewhat 3-saccate, with 3 short teeth. Style with a protruded ball-shaped stigma. Gales yellow with red margins. Parts generally crimson. This description from a plant at Bullfrog Lake.]

Some of our things look like they have been "through the wars" I now know what the phrase means!

Kearsarge Pass, July 15, 1900.
12,500 ft.

- Can see indistinctly the San Joaquin Valley on the west, lofty Inyo Range on the east and look down 7,000 feet into Owens Valley. Nevada or desert side looks weird. Lake just under the Pass on Owens side, green and amethyst at margin to deep blue in center; snow lake; no outlet.

- From the camp at Bullfrog Lake up into Kearsarge Pass, see p. 199 seq.

Wet as well as damp earth can often be freed from roots by snapping ^{with the finger} and when it cannot be pulled off.

Throw into your sheet single flowers when making a spec., especially if they grow in clusters as *Castilleja*.

Kearsarge Pass to

From the summit of the Pass we had a fine view of Mt. Brewer, Deerhorn Peak, and the surrounding peaks. Brewer was particularly fine and loomed decidedly as we went up. The Kearsarge Pinnacles and the Videttes claiming less attention.

In many respects the flora of the cañon * of Little Pine Creek at the higher altitudes is not so radically different from the western side. The botanizing, contrary to my expectation, I found much better however! *Pinus albicaulis*, *P. Balfouriana* and

Independence, July 16

P. Muirayana was all found on this side. At Quinn Valley there was *Yucca* and *Betula occidentalis* comes in. This descends to the Valley Mesa. The Black Oak ^{Quinn's} was the only oak noticed. This descends to the mesa, but the Birch runs out along the streams quite to Independence. So does the Yellow Pine. *Ceanothus cuneatus** came in about at the Kearsarge Mill and was followed down to the Mesa. Lower down was characteristic desert shrubs. — *Ephedra*, a cactus, *Artemisia tridentata*, *Purshia*, Rabbit Bush (*Bigelovia*), etc., etc.

* = *pinifolium* Cov.?

Kearsarge Pass, 12,500 ft.

No. 857. ^{*Polemonium eximium Greene*}
~~*Primula suffrutescens*~~

By or under rocks,
 Herbage rather unpleasantly
 odorous. Kearsarge Pass.

No. 858. *Ribes montigenum* McCl.

Calyx rotate, 3 lines broad.

Petals flabelliform, $\frac{1}{3}$ line
 long, lurid purple. Kearsarge
 Pass.

No. 859. *Potentilla glandulosa* var. *pumila* Jeps.
~~*lactea* Greene~~

Flowers white, with a
 suggestion of cream.

No. 860. *Pedicularis attollens*

Gray.

No. 861. *Senecio Covillei* Greene

Fresno Co., July 15.

No. 862. *Ribes cereum* Dougl.
 Tubular white flo. Right in
 pass at very summit.

No. 863. *Potentilla Breweri* Wats.

No. 864. *Sibbaldia procumbens* T.
 = *Potentilla sibbaldi* Hal.

No. 865. *Veronica*
 Fls. blue.

No. 866. *Senecioid* ?

No. 867. *Phlox diffusa* Benth.

Tilingi Regel var. *caespitosus* (Greene) Grant.
 det. A. S. G.

No. 868. *Mimulus*. In
 alpine streamlet. Leaves
 very clammy as if wet
 with dew. With masses of
 coral-like roots.

Kearsarge Pass, 12,500 ft.

Growing in close
cushion-like tufts.

- No. 869. *Senecio canus* Hook.
Ray 5, deep yellow.
Fresno Co.

Inyo Co.

- No. 870. ^{*Linanthus*} ~~*Gilia*~~ *nuttallii* Gray.
Flowers rather large
and showy. Spm. shows
not at all their size.
Plants growing in the
brush. Kearsarge Mts.
= *Siphonella nuttallii* ^{Gray}.

- No. 871. *Chaenactis*
No marginal fls. with

Inyo Co. July 15, 1900.

enlarged corollas.

- No. 872. *Pentstemon rothrockii*
Gray. Corolla purplish outside
at apex. Otherwise like
next, even as to the
stamens.

- No. 873. *Pentstemon*.
Upper pair of filaments
and sterile filament short
hairy at insertion, otherwise
glabrous. Fls. dingy yellow.
Suffrutescent, 15 in. h.

= *chamaebatiaria*

- No. 874. *Spiraea Millefolium* ^{Maxim.}
Petals white, orbicular,
2 lines or a trifle more
long. Shrub 6 ft. h. Kearsarge Mts.
= *Chamaebatiaria millefolium* Maxim.

Kearsarge Pass, 12,500 ft.

No. 885. *Senecio integerrimus* Nutt.
Wildfl. Lake

vividis Jepsen
~~expansus Nutt.~~

No. 886. *Potentilla breweri* Gray var.
Spreading or decumbent
from the caespitose root.
Stems spreading in all
directions. Petals yellow,
almost round, notched
at apex. Stamens so.
Wildflower Lake.

No. 887. *Erigeron peregrinus* (Pursh.)
Greene ssp. *callianthemus* (Greene) Cronq.
Wildflower Lake.

No. 888. *Senecio scorgonella* Greene
Many stems growing in
a dense tuft, the ^{main} root
common, and the leaves
in a great bunch

Inyo Co, July 15, 1900

No. 889. Larkspur
Wildfl. Lake.
Delphinium luporum Greene.

No. 890. *Arabis platysperma* Gray.
Wildfl. Lake.

Mr. J. E. Laird,
Official Reporter,
Independence,
California.

Mr. A. M. Gibbons,
Sheriff of Inyo Co.,
Independence,
California

Send him determination of
grass, amount of water needed
for growth. Horses seem to
like it especially. See # 906.

Kearsarge Pass, 12,500 ft.

No. 891. *Cercocarpus*. Kearsarge
Mill to Rex Montis Nine.
= *C. ledifolia* Nutt.

No. 892. *Spiraea*
with preceding. *Holodiscus*
~~*discolor* Maxim. var. *microphyllus* Rydb.~~ *Japan.*

No. 893. *Erigeron compositus* var. *glaberrimus* Maxim.
Wildflower Lake. Rays
violet-blue, 80 to 100.

No. 894. *Symphoricarpos oreophila*. Rocks, Wildflower Lake
to Onion Valley.

No. 895. *Sorbus californica* Greene
Mountain Ash.
Onion Valley. *Sorbus sitchensis*
Roem.

No. 896. *Galium mathewsii* Gray
Rex Montis Nine

Inyo Co., July 15,
1900.

No. 897. *Eriogonum fascicu-*
latum, var. ~~*poliophyllum*~~ *poliferum*
Rex Montis Nine

No. 898. *Eriogonum fascicu-*
latum var. ~~*poliophyllum*~~ *poliferum*
with #897.

No. 899. Kearsarge Pass.
Eriogonum ovalifolium Nutt.
var. *ovalifolium*

No. 900. *Apocynum*.
Fls. nearly white. Leaves
more pointed than in #
Onion Valley.

No. 901. *Silene montana* Wats. ssp.
bernardiana (Wats.) Hitchc. & Maguire
Kearsarge Mill. Petals
left into 4 equal subulate
lobes.

= *Eriastrum densifolium*
No. 902. *Julia* fls. sky-blue.
= *Hugelia densifolia* Bth. *densifolia* Bth.

^{Inyo Co.}
Kearsarge Pass, to

No. 903. *Fraseria perennis* (L.)
Wiedfl. Lake

No. 904. *Minimus Tilingi* Regel. Det. A. L. G.
Herbage clammy. Rootstock
scarcely thickened. Onion
Valley.

No. 905. *Betula occidentalis* Hook.
Little Pine creek, even
as far as Independence,
beginning at Onion Valley.
Trees 20 ft. h.

No. 906. Grass.
Independence, in
Court House yard.
Bromus unioloides var *Haenkeanus*
acc Dary.

^{Inyo Co.}
Independence, July 16, 1900.

(*Excoecaria*)
No. 907. *Pinus albicaulis*,
just below Kearsarge Pass.

No. 908. *Pinus Balfouriana*
with # 907. ^{Grass. & Alf.}

No. 909. *Oleome lutea* Hook.

No. 910. *Melilotus albus* Desr.
Introduced at Independence.
Spreading along the irrigation
ditches and much in the way.
The bees feed from it and the
honey is given an flavor
which it would not have
from alfalfa alone. This
flavor is much like
cinnamon. — John Baxter,
Independence.

Independence

Yesterday we were on the very crest of the High Sierras, on the summit of Kearsarge Pass, at 12,000 feet. Today we are in the Owens Valley, - 7,000 feet below, - with its background of desert scenery. Yesterday we were among the snows; by nightfall we had dropped down 7,000 feet in as many hours, through deep cañons and out over burning mesas, every shrub parched but defiant with thorns and

July 17, 1900.

prickles, to this land of Independence, a green place set in the middle of the valley and surrounded by hills and mountains full of every color - reds, browns, rusty shades innumerable, ash-gray, slates and purples - save green. The green of Independence is fed by living streams from the High Sierras. They gurgle and prattle through, and across the streets everywhere. It is Salt Lake City on a very small scale. It is a land, moreover, where there is both milk and honey,

Independence

for this parched traveler has slaked his thirst with the one and anointed his palate bountifully with the other. As to what other things this oasis doth produce I am not as yet well informed but the milk is good milk indeed while the honey is the smoothest and most velvety article I ever tasted.

We stopped at Baxter's Ranch, intending to tarry for a day. But when we were given the freedom of the peach orchard

July, 17, 1900.

said I. Let's stop another day. But when Mr. Baxter brought us out his honey said I at once: Let's remain a week. Then the climax came. The fair daughter of the house brought out a most delicious loaf of cake. Then said I solemnly: This place is all right; here will we remain a month. But we go on today, to Mt. Whitney, to recross the Sierra Nevada's.

Independence

In camp, at Mr. John Barker's place. He has a rather large ranch, a great deal of alfalfa which he cuts for hay and from the blossoms of which the main honey flow for his bees comes. Mr. Barker "raises" about 2 tons of honey per year. Sometimes 3 tons.

Independence is the county seat of Inyo Co. The population - judging from the signs - is largely composed of saloon-keepers and lawyers.

July 17, 1900.

While here I made use of the house of Mr. S. W. Austin who is the U.S. Land Agent at Independence. I met him on the trail, on the very crest of the Sierras. He said he would have been glad to accompany me back to his home and talk Voluntary but for Mrs. Austin being with him. Mr. Austin is doing very efficient work in this region. He graduated U.S. 1886.

I was given a letter to Mr. Wm. Dehy, Dist Atty, who was very kind to me; introduced me to Mr. Gibbons, The Sheriff and to all the other officials about the Court House.

Independence to

Left Independence at 1:00
 o'clock, having had dinner
 at the Norman House.
 South towards the Alabama
 Hills we passed small
 streams from the High
 Sierras, but then there
 were no more and on
 account of the lack of
 water and the exceeding
 heat and dryness I
 suffered considerably. At
 first my mouth got
 sticky and "doughy", then
 an intense dryness or
 parched feeling came, as
 if the tongue and other
 organs had actually been
 subjected to fire. I became

Long Pine Creek, July 18

weaker and weaker and rested
 frequently. Finally about a
 quarter-of-an-hour before
 dusk I saw green, beautiful
 green trees rising from the
 rocky sage-bush vista of
 the Alabama Hills. They were
 but one-third of a mile away
 when I saw them and
 this renewed my strength
 wonderfully and I hurried
 to the beautiful stream of
 cool rushing Sierra water.
 This night we had adventures
 galore. Sierra was staked; she
 got loose at midnight and
 followed that brute (hobbled) on
 the back trail. Stone heard her
 go by the camp and rushed

Independence to

down to the ford in time to seize the rope. He hurt his feet very ^{trailing} much and will be more or less lame for a day or so. Strangely she got loose again and we did not hear her go by. But Hot Haste with his bell awakened us. However before I could get on my shoes he had forded the stream and was gone. I hurried after. It was scarcely daylight and I could scarcely follow the trail. To hear the bell I would have to stop and listen. It was like following a will-o-wisp. Everything was gray and

Long Pine Creek, July 18

indistinct; every once in a while I fancied I could see a bit of dust ahead. On and on I ran, clad in my sleeping garments, my shoes and my canvas coat. Nothing else. After a 2 mile chase I reached a place where I knew there was a deep gully, easy for Hot Haste to get down but hard for him to get up. I saw them ahead, Hot Haste struggling up the opposite side. I raced around and headed him off. Captured was he. I rode him back to camp and sang out to Stone as I came in. When Johnny comes marching home clad

Lone Pine Creek to

in his night-clothes!

Next day we were tired out and made Barroil Creek with difficulty about 1:30 o'clock. At this point at the base of the hills the Hockett trail - "brink road" of the pack trains to Usalia - starts up.

The slopes of the Inyo Range, naked, desolate, are nevertheless fascinating to gaze at on account of the numerous colors - terracotta to brick-reds, purples, violets, slates, grays, drabs, yellows and browns. The colors are so disposed that I could

Barroil Creek, July 19, 1900.

not resist their being shadows. in spite of the color - and in spite of myself repeatedly looked to the sky - a cloudless sky - to see where the clouds were. Away south towards the end of the range a great strip is black and this is more deceiving as to its being a shadow. South eastward in a gap over the Strange Owens Lake I see ranges after ranges glowing in their sunset purples - and one very large mountain somewhat apart from the rest.

Carroll Creek, up

The shrubs which make up the "Sagebrush" look so much alike at this season that it is difficult to distinguish species.

(The common shade tree in all this region is Locust. *Populus trichocarpa* is also planted. Mr. Baxter has some fine trees.)

At the Carroll Creek camp there are remains of a settler's ranch; locust trees, wire fence, some cleared land, etc. What a spirit to select this for a home. Or perhaps lack of a spirit?

The Hockett Trail, July 20.

Pinus monophylla on the lower hills, low round rather dense habit of the tree makes them look to my eye singularly like live oak scrub in some parts of the North Coast Range. All the mountain sides are covered with it. No other tree.

It seems as if we had been out a very long time. Every day brings something new and strange, some incident or accident. When we had been on the trail a week I had the sensation of having been out a month.

Hockett Trail

I notice that a great many of the vernal desert animals which are standing dry up between the "sage-bushes" have dried-persistent corollas. I wish that marcescent-persistent meant this for the corollas are not withered but dried in shape. Is not this very characteristic of desert plants?

Our mules are very keen of ear and take mighty good care of themselves. May not their sensitive ears be a reminder to the high development in the wild ancestor?

July 20, 1900.

Arrived after a very tedious march at Big Bottomwood meadow. It was in reality a march up the eastern wall of the Sierra, the trail reaching 9000 or 10000 feet between the little Big Bottomwoods. This walk proved to me that I had hurt my lungs on the long chase after the mules. I could go but a few feet without stopping to rest. When I reached 9000 feet, however, some new plants came in and these interested me that I forgot that I was tired! At least for the time being. What a queer creature is a botanist.

Hockett Trail.

From the Carroll Creek camp I could look directly up the cañon and see the perpendicular walls of the High Sierras. They seemed so near that the hand might be put out to them. Here and there I had noticed the forest covering peaking over.

The pines on the high slopes and meadows between Little Cottonwood & Mulkey Meadows are Tamarack, Foxtail, & near Little Cottonwood, *Pinus jeffreyi*? with a large yellow pine-like cone.

- *Astragalus lentiginos* Dougl. var. *albifolius* Jones. No. 913. Cont. from p. 144.

Big Cottonwood Meadow.

The meadows are similar to William Meadows rollers: *Pentstemon confertus*, the yellow fl. *Torsia* of William's Meadows, *Minimus primuloides*, the *Minimus* bordering high montane brooks with clammy foliage (no. 868) as at Kearsage Pass.

We camped two days at Cottonwood Meadow, hoping that I should recover from my injury. But blood still comes from my lungs - not in serious quantity - but it seems worst to go straight down the Hockett Trail and leave Mt. Whitney for another trip.

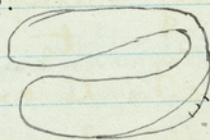
Big Bottomwood, July 21 & 22.

There is a trail leading on up the Cottonwood to Cottonwood Lake. This trail is well traveled by Owens Valley campers. One, going to Whitney should be sure to cross the creek at the lower end of the meadow and in about a half-mile you will come to a tree blazed with a $\diamond$ and a T to the right left of it. This marks the trail to Whitney Meadows leaving the Hockett Trail.

We simply passed over the ends of the horse-slime at Horse-

July 23, 1900.

Shoe Meadows. I did not examine or plot the meadow but the branches of a stream show of a meadow formation somewhat thus. -



I should say.

We passed through Mulkey Meadows, and lunched at noon in a fork of the South Kern.

Stone caught nearly 100 Golden Trout at Cottonwood. While he was preparing a mess for the Jay-pun I took the pole and in about 15 min. caught six bearties. They have a golden band along each side (varying in

July 23. Inyo Co.

width) and a broad golden
band beneath.No. 911. *Forestiera neomexicana* Gray.
Shrub 4 or 5 ft. h. with short
stunt branches. Alabama Hills.No. 912. Alabama Hills. *Psathyrotes ramosiss-*
anua (Torr.) Gray. *Grayia* Gray.No. 913. *Astragalus prostratus*. Alabama Hills.
Contig. n. asus var. *altifolius* Jones. See p. 140.No. 914. *Aphyllon*. Lone Pine Creek. LowerA. comosa { fls. on pedicels, 1 or 2 lines long.
var. *brutia* { Corolla purplish on inside of
cola Jepson. { lobes, yellowish-white outside.No. 915. *Eriogonum* ^{baileyi var. *brachyanthum* Cov.} Near Shepherd's Crk.
Over 1/2 the plant cut away -
Texas Umbrella Tree habit.No. 916. Alabama Hills *Prunus fasciculata* GrayNo. 917. Composite. Lone Pine Creek
Chrysothamnus nauseosus var. *speciosus*
(Nutt.) Shrub with strictly erect
Hall

fastigiate habit, 4 to 5 ft. h.

No. 918. *Atriplex* ^{*polycarpa*} Near Shepherd's. One
of the bushes of the "Sage-Bush".
LowHorseshoe Mdw, 1900.
(Inyo Co.) 9700 ft.

Gleomella

Torr. & Gray.

No. 919. *obtusifolia*. Near Lubkins,
semi-moist mds.No. 920. *Eriogonum*. Carroll Creek.Stems tri- to quadri-chotomously
branched, the racemes with
the involucre's unilateral and
pendulous!! 2 ft. h. several
stems from base. Involucres
4 to 10-flowered.No. 921. *Castilleja*. Teeth protruded from
cleft. ^{of calyx} Galea turned downward
from the cleft in calyx but mostly
shorter than calyx lobes. Leaves thick,
conduplicate, channeled on upper
surface. - Carroll Creek.No. 922. Composite. Fls. light yellow.
4 to an involucre. Involucres in
clusters. Hockett Trail, to
Little Cottonwood (Inyo Co.).
^{from Carroll Creek}No. 923. *Gilia* ^{*pungens* Bth.} With preceding,
^{= *Leptodactylon*} *pungens* (Torr.) near Little Cottonwood Mdw.

"Summit" of Hockett Trail is near Wagon Peak, W. Inyo Co., before reaching Little Cottonwood Creek, on the way to summit of the Sierra Nevada and Mulkey Mtn. (Horseshoe Mtns.) 9700 ft. July 23, 1900. Inyo Co.

- No. 924. *Arenaria* ^{congesta Nutt.} Petals white, oblong, 2 1/2 lines long. Stamens 10.
Hockett Trail Summit to Lit. Cottonwood Creek, Inyo Co.
No. 925. *Pinus monophylla*. Hockett Trail above Carroll Creek, Inyo Co.
No. 926. *Ephedra*. With preceding.
No. 927. *Lupinus*. Hockett Trail (cont. on p. 194) (L. breweri Gray) Summit near Little Cottonwood.
No. 928. *Gilia*. Fls. pink-red, with #927. ^{var. cana}
No. 929. *Trigonon* ^{var. cana} ~~longifolium~~ ^{var. cana} Cottonwood Mtn.
No. 930. *Gayophytum* - Cottonwood Creek M. ^{Big} Herbage very purplish. { *G. ramosissimum* T. & G. }
No. 930 A. *Achillea*. ^{var. cana} With #930.
No. 930 B. *Atriplex* ^{phylostegia} Series - moist field near Lubkins. Branching, 1 1/2 to 2 ft. h., leaves becoming white-papery.
No. 931. *Calypt. dium* ^{Spraguei} Horseshoe Mtns.
No. 932. *Composite* ^{umbellatum} ^{apertum} ^{Gray} ^{Inyo Co.} Horseshoe Mtns. = on Cottonwood Creek.

Mulkey
Milkey Meadow. 9500 ft. Inyo Co.

- No. 945. Dwarf *Eumans* on the disintegrated granite Milkey Meadow, (sandy granite hill) Lower lobes transversely rhomboidal or elliptic or somewhat quadrangular,   somewhat thus, spreading. Upper lobes erect at base, then recurving, of much the same shape. Corolla yellow - marked in throat. - Mulkey Mtn.
No. 933. *Larkspur*. ^{*Dolichium luteum*} Near summit of Eastern Divide - Sierra axis. ^{This is near Trail Peak.}
No. 934. *Sambucus* - 3 or 4 ft. h. with ^{racemosa L.} (preceding) ^{covillei Greene.}
No. 935. *Senecio*. Summit Eastern Divide to Milkey Mtn.
No. 936. *Girgoum* East Fork Kern. ^{umbellatum} = South Fork ^{var. umbellatum}

Whitney (Volcano) Creek.

-Willows - habit of Nos. 952. + 954.



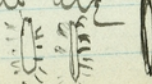
Round broad
heads - many
stems from
a clustered
base.

Numerous depressed dead
branches at base. - Sketch
from creek - branch of
Whitney.

Met a young fellow, ex of
Bakersfield, on the trail.
Had met him before at Carroll
Creek. Stopped for a
moment's chat. At last
said he: are you botanizing?
Then I had quite a talk

July 23, 1900.

with him and found him
much interested in my
work. So it has been
constant. Scarcely a
person I meet on the
trail but asks "Are you a
botanist"? Or "Are you
botanizing?", and appreciate
or at least understand
what I am about. Tourists,
mountainiers, prospectors,
rangers, packers, what not.
Said he, in parting, I'd like
to camp near you for a week.
He was plainly an Englishman.

The blazes on the Hockett +
Whitney Meadow trail are
mostly long narrow. 

Whitney Creek (= Volcano Creek).

Harold H. ~~Brady~~ Brady
Delta Kappa Epsilon,
Berkeley.

Met a party at the foot of Whitney creek, Mr. & Mrs. Brady and another lady and gentleman, from Los Angeles. They had three packers and 18 animals and were traveling in style. The Brads have a son at the University on whom they wish me call when I return to Berkeley. His address is as above.

No. 947. Senecio. Milky Mdw.

No. 947. A. ~~Arnica~~ ^{filiosana} Volcano ~~Whitney~~ Creek.

No. 948. *Eriogonum* ^{sparganum} fls. 2 1/2 lines
broad, white, brownish vein running nearly
to summit of the M M petals or the
petals merely acute and not obviously
toothed. - Whitens meadows in Whitney
Creek = Volcano Creek. Plants often 3 times

Tulare Co

July 24, 1900.

Helenium Hoopesii Gray.

No. 949. (Whitney Creek. Composite.)

No. 950. *Juncus* ^{occidentalis} ~~Whitney~~ Creek.

Mrs. A. G. Harvey
Long Pine, Inyo Co.,
Copy of the "Tree Book".

"Has the finest flower-garden
in Inyo Co." White roses, pinks
geminis turn to pink.

"Chervil makes my flower bed."
In a year or so the white flower
turn; the bride returns to pink;
white phlox becomes spotted
or striped; the change is
not uniform, there is mostly
more or less tinting or
bicoloration.

Camped at Fenced Mdw.

Fenced Mdw. * Kern Cañon

Mrs. Harvey continues:

Boso Springs - bubbling
 hot spring, some acid,
 some sour, some with
 green ^{scum}, Springs about 40 mi.
 from Lone Pine. "Have yet
 failed to cure a case of
 rheumatism". Mrs. Harvey
 cooked a pudding, beans, etc.
 in one of the springs.
 Wagon road, but not good
 one. Wonderful cures
 related. "People taken
 there on mattresses, in
 4 or 5 days able to walk".
 Dr. Woodin of Independence
 owns the springs.

* junction of Volcano Creek (Golden
 Trout Creek) and Coyote Creek with
 Kern River. = Lewis Camp of Forest Serv. map.

July 25, 1900.

Went up Kern River with
 the Harveys, of Lone Pine on a
 trip. In the party: Mrs. Harvey,
 Mr. Fred. Harvey, Miss Lottie
 Harvey, Berge Harvey (youngest
 girl), Mrs. Eugenie Mason,
 Mysan, Miss Matilda Meyson.
 Mrs. Harvey pointed out to
 me in the river bed a
 plant which looks horses
 as badly as loco weed. (See p. 157)
 Mrs. Harvey tells me that the
 Indians use the ripe berries
 of *Cornus rubescens*, no. 975,
 to catch fish; berries thrown
 in stream, eaten by fish,
 the fish are "put to sleep",
 come to surface, float, and
 caught.

Term Canyon

They told us very much about the Indians and their habits. Also a story: The Indians about Lone Pine & Independence in older days made a daily house to house canvas for breakfast thus getting six or seven meals. A party of mining experts encamped in Owens Valley generously fed an Old Indian but soon their wonder grew at the amount of food which he consumed. Soon the matter became serious to these transients but filled with the scientific spirit they resolved to experiment. Having as they

July 25, 1900.

bought a superfluity of dried apples they began, the next morning, the menu with this fruit. The Indian steadily ate and ate, never saying "enough". At last wearied they gave him two very large cups of coffee. Then the Indian went away. It is a far cry from the San Francisco music halls to the desert but they said that the Indian "never came back."

- Mrs. Harwin's live plant of the Term mentioned 2 pp. back is *Hesperokkia Torreyi*, of which I collected specimens at Round Mountain. I noticed that our mules would not eat it in this River Canyon.

Kern Cañon

Raspberries will be ripe in about 2 weeks. Mrs. Haway uses the very spring gooseberry, the large one for cooking; the sparrows do not trouble but "cook right up."

Mrs. Haway tells me that the bark of Elder Berry is made into a medicine which is a sure cure for dropsy. Wild cherry bark used also in rural medicine.

= *Prunus emarginata*
prob.

July 25, 1900.

Rattlesnake antidotes:

Mrs. Haway: Common Soda, administer dry to wound after cutting from fang to fang if there are two marks. Others apply Furmenting, Coal-oil. Gunpowder, chew + put in bite. Indians of Owens Valley put on flesh of snake if snake has not bit itself. Bark of ash (^{leather-leaf} Oregon ash) chew up or boil in milk and apply. Apply Soda until it guls "boiling up green".

The "Cottonwood" of this region is *Populus trichocarpa*.

Kern River Cañon

Trees: *Pinus ponderosa* ^{var. jeffreyi} (with mostly large cones and wine-colored bark.

Sugar Pine. *Cornus pubescens*. Tamarack. Fir. Black Oak (*Quercus Calif.*). *Liriodendron*. Along the river are no characteristic riparian trees but *Populus trichocarpa* and ^{down} willows.

Have seen nowhere in this region Douglas Spruce or Mahoe Mats.

The pines cling all over the steepest and highest cliffs - the species first mentioned at the top of the page.

July 25, 1900.

I have been enjoying exceedingly the royal feast of wine-colored trunks of *Pinus ponderosa* (large-coned ^{var. jeffreyi} form). There is very shade but here and there is one more delicately or intensely wine-colored. One can catch the tint by no other frame. It fits exactly. Seldom as names of colors do fit shades one finds in the wilderness.

Kern River Cañon

One speaks to everyone one meets on the trail and one usually stops and chats awhile. The mountaineers can give you information about the country; ^{country} people from the hot valleys can tell you how terrible the trails are; city people and tourists will ask: What's the news? But this is true: I never in all my ten years of mountaineering ever met a man on the trail that did not know something I did not know!

July 25, 1900.

Went over this evening to the Harvey Camp and soon it was proposed that we all go down across the meadow to the Soda Spring. Fred Harvey got pine sticks for torches and soon we filed away, each carrying a flaming knot, and trooped across the meadow to the spring. Mrs. Harvey had come rimp for the purpose so we had flavored soda water! The spring is partly spoiled by the meadow being so abundantly irrigated. Mrs. Harvey has lived for 25 years on what I would call the frontier. has crossed the Colorado Desert 14 times, is well-informed, is a good observer and is generally

Fenced Mdw., Kern Cañon

Lewis Camp of Forest Service Map

an interesting woman. She tells me that Inyo Co. has voted \$10,000 for a tramway to Mt. Whitney. Too bad, say I!

- Bear called at our camp this afternoon while we were up the river. An eye-witness said he did not stay long enough for him to get a shot.

I speculated a few pages back re. the man of Carroll Creek. Mr. Carroll has gone back to England acc. Mrs. Harvey with the finest Indian utensil

basket, the collection ever made and a series of excellent photos. of the region which were much admired. He intends to return to Carroll Creek and convert it into a park.

July 25, 1900.

You can say of the forests of California that they are entirely confined to the mountains. South of Tehachapi are the deserts. North the plains of the Sacramento and San Joaquin are treeless or like the Coast Range valleys with scattered Valley Oak which forms no more than groves. The groves are sometimes extensive but cannot be said to be dense anywhere.

Coyote Pass Trail! not
Poison Meadow Trail

Trees on first part of trail, east
of Summit, after reaching
the heights:

Tamarack, Fox-tail Pine, Abies,
No. 3, Little Sugar Pine.

Cinquantin abundant (I can
always tell when I am near
this at this season by
the sweet but somewhat
ickening or offensive odor
of the flowers. It is in
fl. Yet I see shrubs laden
with nearly full-grown
greenish-yellow buds.

"Poison Meadow Trail" =
Coyote Pass Trail!!

- *Lupinus lyallii* Gray var. *lobbii* C. P. Sm.
Cont. from p. 167. See no. 958.

Tulare Co.

July 26, 1900.

No. 951. *Birsium* ^{*dummondii* T. & G.} Whitney Creek =
Volcano Creek.

No. 952. *Salix* ^{*severiana argentea* (Bebb.)} See descrip of habit
on p. 150, 17p. back. Whitney Creek bed, com-
mon about and in mds. in all
the region. Roundish habit, numerous
stems from a clustered base.

No. 953. *Ranunculus* ^{*agrostilis*, L.} Aquatic in
Volcano (Old Whitney) Creek.

No. 954. *Salix*. With 952 and of same
See p. 150. Habit. S. *hemmoni* Bebb. acc. Schum.

No. 955. *Collomia* ^{*linearis* Nutt.} Corolla pink, $1\frac{1}{2}$
lines broad; lobes reflex.
Old Whitney Creek.

No. 956. *Polygonum* ^{*douglasii* Greene} Whitney Creek.

No. 957. *Laryophylla* ^{Old.} *Stallaria* *ling. pes.*

No. 958. *Lupinus* *lobbii* " "

No. 959 = *Lupinus purpurascens* ^{See p. 166.} ^{See 5:26.}
^{*flavescens*} ^{Old Whitney Creek.}
Petals white, narrowly ovate, notate,
giving a sparse appearance to the
corolla. *P. purpurascens* Greene.

Farewell Gap to Mineral King

We passed through a very pretty country from Chinguaquin Pass to Ghotgun Creek. The ascent to Farewell Gap is very gradual but long. The Fox-tail pines bottle up to within a mile of the summit. Mostly rather fine individuals with large trunks but the tops often much storm-beaten. The snow still lies heavy in the face of the Gap on the south side.

Don't believe that you have seen the top of the pass until you get there. As long as there is a considerable stream of water on the ridges before you have some distance still to go.

Inland C.
July 27, 1900.

- = *Ivesia purpurascens* (Wats.) Keck
- No. 960. *Potentilla*. Suppl. of 959.
Pinnus jeffreyi Gray & Beck.
- No. 961. Jeffrey Pine. Old Whitney Creek near the Kern. Trees 100 ft. h. White-colored trunks. Half-way from "Tunnel" to Kern Cañon.
- No. 962. *Oenothera* xylocarpa Cov. fl. closed in day-time, at least during middle of day. Sandy cañon bed of South Fork of Kern River.
- see p. 1748 →
- No. 963. *Ceanothus* pinetorum Cov. Low-spreading shrub, 6 ft. in diam. Old Whitney Creek near the Kern. (= Volcano Creek)
- No. 964. *Mentzelia*. Old Whitney Cr. Inland C.
- No. 965. *Madia*. Rays 3-fid rather deeply, 8 to 11 about. Old Whitney Creek. See p. 193.
- No. 966. Composite. *Helianthemum* *Huterea* Gray & Beck Natural Bridge, Old Whitney Creek. Rays 14 to 19. Plants somewhat tufted. Poi-

Fenced Mdw. = Lewis
Camp of U. S. For. Service
Map. See p. 154, ante.

Kern Cañon

Tulare Co.

sonous to sheep, acc. Mrs. Harvey.

No. 967. *Brickellia*. Kern Cañon near
Fenced Meadow.

No. 968. *Angelica*. Umbels often 2 or 3 in.

(*A. lineariloba*) broader. With 967. Kille
Gray.

Horses acc. Mrs. Harvey.

No. 969. *Ribes* ^{*cereum* Dougl.} Berries crimson when
ripe. Same loc.

No. 970. *Castanopsis* ^{*sempervirens* (Kellogg) Dud.} Young fls +
young fruits but no female
fls. Stamens 10, 11, 12. Kern
Lake.

No. 971. *Cerasus* ^{*prunus* *emarginata* Hook. Welp.} Kern River Cañon.

Used for colds acc. Mrs. Harvey.

No. 972. *Rudbeckia* <sup>"Fenced
meadow"</sup> in
californica Gray. Kern River Cañon. Also noted
in Kings Cañon

No. 973. *Cirsium* ^{*collare*} Kern River Cañon.

No. 974. *Aster*. Rays long and very
narrow, numerous, blue.

1900, July 25.

(*Stolonifera* Michx., not *californica* C. A. May.

No. 975. *Cornus* Indian used the
berries for stupefying fish. ^{See p. 155.}

No. 976. *Erigeron* ^{*divergens* T. + G.} Rays sky-blue. Pine
Daisy. Kern River Cañon.

No. 977. *Ptilonia* ^{*Stephanomeria virgata*} Horses like this.

Rays heliotrope or "light purple
with a suggestion of lilac".

No. 978. *Epilobium* <sup>Leaves glaucous,
globarum Barb.</sup> very noticeable. Fls. crimson-purple.
Petals bifid, 3 times ~~so~~ long. One-
fourth of plant taken. High
meadow on Coyote Pass trail,
by streamlet.

No. 979. *Eriogonum* ^{*membrum* *Whitneyi*} Coyote Pass Trail,
Great Western Divide. See p. 193.

No. 980. *Abies* ^{*magnifica* Mill.} Picture taken of trunk.

Red Fir. Trees 125 to 150 ft. h. Trunks
to 5 ft. diam. Bark brown, somewhat
reddish, deeply fissured & checked
and somewhat oak-like.

Coyote Pass

Dawtooth Range

~~amplexicaulis~~ Nutt.

- No. 981. *Arnica* Rays 10, 12. By a mountain torrent, on bank its roots washed by the stream.

Coyote Pass Trail - Western Divide.

- No. 982. Annual *Streptanthus*. Fls.

yellow. Upper pair stamens distinct.

- No. 983. *Lupinus*. Coyote Pass. L. ^{Gray} ~~brevifolius~~

- No. 984. *Pentstemon*. Fls. dull

P. both yellowish white. Lower lip of rockii 3 recurved broadly oblong lobes, each with a purple midvein.

Upper lip notched, ridged down the back, somewhat galeate or hooded, i.e. turned inwards at top.

- No. 985. *Spiraea* ^{microphylla Rydb.} Coyote Pass. See p. 174.

- No. 986. *Ceanothus pinnatifidus* ^{Coyote Pass}

- No. 987. *Pinus* ^{murrayana Gray & Balf. var. ~~mutilata~~} Coyote

Pass, near summit - on east side. Cones also taken from same tree.

Julian Co.

1900; July 26.

~~albans~~ var. *gibbensis* Jepson

- No. 988. *Stachys* Below Coyote Pass.

- No. 989. *Zauschneria* ^{californica ssp. latifolia} Coyote Pass. color crimson when dry.

- No. 990. *Pentstemon*. Fls. Purple-lilac.

Caespitosa - matted. One-fourth plant taken. Thick leaves. Herbage very glaucous. Summit of Great

Western Divide - Coyote Pass.

- No. 991. *Pentstemon* ^{palmeri Gray} Shetler Creek

region. Corolla dull-white and violet-purple, the lower lip with purple lines and markings in throat on lower side and on lip. Tip of style ^{filament} curved & with a tuft of long yellowish hairs; style with rusty short hairs below.

- No. 992. *Cirsium* ^{coultteri}. Little Kern. 6 ft. h.

- branching above. Fls. pale crimson.

- No. 993. *Cirsium* ^{andersonii}. Fls. crimson-purple. 3 ft. h. branching little. Little Kern.

Farewell Gap

10,588 ft.

Hulsea heterochroma Gray

No. 994. Composite. Stem simple or many from the base. Rays narrowly linear-involute, toothed at tip and hairy. Shotgun Creek.

No. 995. Grass. *Sitanion hystrix* (Nutt.) J. G. Smith. Farewell Gap. Same as in Kern Canyon. Carried all over

by sheep. *Sitanion glabrum* J. G. Smith.

No. 996. Ribes. ~~*leptanthum* Gray~~ *laevis* Nutt. ~~forming round low bushes~~

Berries current color a crimson. Farewell Gap.

No. 997. *Eriogonum* ^{*umbellatum* var. *umbellatum*} Farewell Gap.

No. 998. *Streptanthus*. Two sheets - not

all of plant. *S. tortuosus* Kell.

No. 999. *Asclepias* ^{*viridifolia* Nutt.} Farewell Gap.

No. 1000. *Helenium*. " " *H. bigelovii* Gray

No. 1001. *Senecio* ^{*radicalis* Gray} " "

No. 1002. *Pentstemon*. Two strong folds in throat on lower side ending abruptly on margin of lower lip where it is bent outward. Below

Farewell Gap, towards Shotgun. This

Juliana Co.

July 27, 1900.

- No. 1006a. *Collomia heterophylla*
Hook. East Fork Kaweah River.
 - *Astragalus bolanderi* Gray, no. 1005.
 - No. 1013. *Cymopterus terebinthinus* T. & G.
 - *Holodiscus discolor* Maxim. var.
microphyllus Jepson. No. 985. See
p. 172.
 - "South Fork of Kern River", as marked
on U. S. topog. map, is really East
Fork, geographically.
 - No. 1015a. *Sanicula*
- Mudry Mtn., July 23, 1900. Tulare Co.

Farewell Gap, Tulare Co.

1900, July 27.

- is *P. fruticosus* Cov.
picta sp. *dentata* ~~see integrifolia Gray~~
- No. 1003. *Pyrola* ^{*Holboellii* Hornem.} Below Farewell Gap.
 - No. 1004. *Arabis* ^{*A. rectissima* Greene.} Farewell Gap.
 - No. 1005. *Astragalus bolanderi* Gray
^{See p. 174 f.}
 - No. 1006. Composite " "
 - No. 1007. ^{*Lipanthus*} *Julia nuttallii* Gray. " "
^{*isocnemon* polypodium Small}
 - No. 1008. *Erigeron* " "
 - No. 1009. Composite. " "
^{*Helenium hookerianum* Gray.}
 - No. 1010. *Valeriana* " " See p. 176.
 - No. 1011. ~~*Cirsium drummondii*~~
^{*Helenium hookerianum* Gray.} " "
 - No. 1012. *Crepis nama* Rich. " "
 - No. 1013. *Perceadanthum* " "
^{See p. 174 f.}
 - No. 1014. *Gentiana*, Specimens all
^{*calycosa* Griseb.}
in a clump (from a single tuft).
- Two linear-oblongate areas
beneath each lobe in tube and
greenish dotted as if glandular.
Processes in sinus triangular-
subulate. Lobes with yellowish
dots, the dots obviously with a narrow
white margin. - Farewell Gap.

July 27, 1900.

[No. 1010. *Valeriana*.

Forewell Gap. Bilabiate white
fl. 2 lobes in upper lip, 3 in
lower, not very unequal.

St. 3; style 1. Ovary inferior.

Corolla $1\frac{1}{2}$ lines long, nearly
2 lines broad. Calyx a mere
rim or obsolete? No! Calyx
unfolds and make a papery-
like crown of plumose
hairs!!

covillei Greene.

No. 1015. *Lupinus* very hairy; fls. very
showy - Forewell Gap - South side.
Det. also C. P. S.

Felix Lery, Butcher, Visalia
B. G. J.

B. G. Wilcox, Visalia } Visalia
J. B. Thomas, Visalia } Blue
C. S. Eaton, Visalia } Purple

Interested in transplanting trout

Mineral King.

They say the Golden Trout transplanted
from Whitney to other streams
"go back" in color.

- A camper here tells me that ants
will not trouble wooden kayaks if
covered with Burlap. In New
Mexico and Ariz., etc., kayaks are
called panniers.

[No. 1155. *Angelica Breweri*?]
Common everywhere nearly at
7700 + 8500 ft. Fls. white.
Unifl. 3 to $4\frac{1}{2}$ lines in. bud
in flower!] = *A. lineariloba* Gray!

lemonii Wats.

No. 1016. *Arabis* Forewell Gap.

No. 1017. *Lupinus* "
cult. ex sonori Greene "

No. 1018. *Composita* "
Broken up at ground.

Mineral King Road. July 28, 1900

Sequoia gigantea
 "Redwood" grove about 1 mi. below
 Soldier's Camp at Wisham's Mill.
 As an ^{ex time} packer says: "You can tell
 a Cedar by its flat leaf and a
 "Redwood" by its round leaf." The
 trunks to the novices or to the
 layman often look alike.

One never hears of a mule dying,
 unless he falls off a cliff
 and then he may not get
 hurt.

Do not tie your mule to a
 rotten limb.

No. 1019. *Oxyria digyna* ~~complanata~~ (L.) Hill

Firewall Gap, north slope.

No. 1020. *Mimulus* ^{Tillingii Regel. det. A. S. G.} ~~flouring~~ in

alpine streamlet; stems sparingly
 leafy, bearing very showy fls. Firewall G.

Atwell's Mill

Sequoia gigantea - Big Tree.
 Cut redwood trunk, 500 yrs.
 Rings 25 to 1 in. into half
 of trunk. Trunk 68 in. diam
 at center about 9 to 10 in.
 Trunks in cross-section red
 with a margin of white.
 Trunk 32 in. radius had a
 white margin of 4 in.
 Other ^{larger} trunks margin of about
 1/15.

Fine view from here of Saw-
 tooth. Long granite ridge with
 a sawtooth at one end
 pointed towards the main
 ridge. Below is a smaller
 red mountain with a
 Sawtooth.

Timber Point, 5900 ft.

californica Torr.

- *Fremontia* just below Timber Point, shrubs laden with fruits, globose-ovate, $1\frac{1}{8}$ in. long, covered with short stiff hairs. Shrubs look like young seedling peach trees, the branches laden with fuzzy peaches.

Redwood Cañon, 5450 ft.

Redwoods ^{Big Trees} here at the lower timber line there being chaparral below everywhere.

- *Fraxinus*, 4275. *Berberis* sp. same as at Vanden. *Berberis*, 4450 ft. h. Some hairy, same texture.
= *B. aridum*, Jepson probably.

Three Rivers. July 29, 1908.

- The buckeye leaves have been burnt into a crisp, but the reddish-brown color is that of autumn.

Mr. F. B. Britten,

Three Rivers,

would like to experiment with the Coffee Plant. Would put time and expense into the matter for his own satisfaction. He is a member of the firm of Britten Brothers, Store-keepers and farmers.

Ned Britten - blacksmith

Ernest Britten - ranger.

F. B. Britten, - farmer.

Farewell Gap Tulare Co.

No. 1021. *Epilobium obcordatum* Gray.
Farewell Gap.

No. 1022. *Artemisia*? ^{Norvegica Fries} Farewell Gap.

No. 1023. *Solidago*. " "

No. 1024. *Pentstemon* ^{Shrubby beds}
^{Davidsonii Greene.}
of it on the rocks. Farewell Gap.

No. 1025. *Ranunculus* ^(oxymotus Gray.) " "

No. 1026. *Ribes* ^{cereum Dougl.} Mineral King. Fruit
glandular, "never gets ripe".

No. 1027. *Ribes* ^{oxyacanthoides var. saxosum Cov.} Ripe fruit pink.
Used at Mineral King, makes a
sharp sauce. "Old-fashioned
gooseberry with the thorns on
the stems." See p. 183.

No. 1028. *Lonicera* ^{conjugialis} Above Mineral
King in great quantity.
Shrubs 5 ft. h.

No. 1029. *Valeriana sylvatica*.
Within 20 ft. of snow. Farewell
Gap.

1900, July 27.

No. 1027 cont. from p. 182
Ribes oxyacanthoides L.
var. *saxosum* Cov. =
R. inerme Rydb.
Ribes divaricatum Dougl.
var. *inerme* (Rydb.) McMinn.

Big Cottonwood to

Left Big Cottonwood Mdw.
 Early in the morning of
 Monday, July 23. Summit
 of Eastern Divide, passing
 through Horseshoe Mdw.
 Milkey Meadow. Lunched on
 East Fork of Kern in a beautiful
 little cañon by an ideal
 hillside meadow. Small
 stream but full of trout.
 Turned south, then after a
 short distance east west
 out over a long and rather
 broad cañon with much
 open or sterile - sandy
 places in it. Came ere
 long to the tunnel between
 the East Kern and Whitney
 Creek. The two streams

Mineral King, 1900

come within 20 ft. of each
 other and then diverge
 widely again. Whitney's
 water has been diverted into
 East Kern for extra mining
 supply - by means of a
 tunnel. Camped for the
 night two miles below
 tunnel on Whitney Creek.

July 24.

Went on down Whitney (Volcano)
 Creek to Kern Cañon at the
 Fenced Mdw., where we had
 lunch and decided to stop
 and find out about the
 Poison Mdw. Trail, a cut-off
 to Mineral King. We afterwards
 found out the trail we want
 over was the Coyote Pass Trail.

Big Cottonwood to

July 25.

Fenced Mdw. Kern Cañon.

July 26.

A late (10.00) start for Mineral King. Camped in a meadow near summit of trail over Western Divide for lunch. Went through Coyote Pass and found it very steep. Terrible trail. Hat nearly fell off trail but I let go his rope in the nick of time. Camped late at night on Shotgun.

Mineral King, 1900

July 27.

Long hard pull to a mdw. within $\frac{1}{2}$ a mile of summit of Farewell Gap where we lunched. Met Ernest Batten the Ranger on the trail. He was heading for a fire which had started on Shotgun. A Soldier party was following him up. Camped for the night at Mineral King.

July 28.

Down the road to Redwood Cañon where we lunched, to Lake Cañon for the night camp, where were teamsters and campers of all sorts.

Big Cottonwood to Mineral

July 29.

Got a very early start, being awakened by the trainleis at the ungodly hour of 3:30.

Found the road down dusty and hot and altogether uncomfortable after the cleanliness and coolness of the high forests.

We kept straight on, not stopping for lunch but expecting to reach Three Rivers by 1:00 o'clock, which we did a little after 1:00. Here we pastured the mules

King and Three Rivers, 1900

for 15c a day, in Britten's pasture.

In the evening I saddled up Sierra - Mr. Britten leaving me a saddle - and went up to Redstone Park to see Mr. Hopping. He had brought out my bundle of plants from the Giant Forest all right and seemed pleased at being asked to go on the Whitney Trip, which I proposed to make in the few days left me - two weeks. The next morning I took the stage out to Visalia to purchase

Visalia, July 30 + 31

supplies. Stopped all night at the Palace Hotel; ate like a starved man at the hotel table; packed up my dried plants and left them until my return from Whitney; had some ice-cream with ~~at Redstone~~; interviewed by Mr. Happing

a "reporter" of the Visalia Daily Times, Mr. Maddux, the editor; bought some fresh clothes, etc. and the next morning went back in a heavily loaded stage to Three Rivers.

Three Rivers, July 31.

Here I found Mr. Stone, my companion, suffering from toothache. He decides not to take the Whitney trip and will go out on the stage in the morning. Now, Mr. Happing + I, start into the mountains at the same time. Hurrah! We shall soon be off again!

Collecting Plants.*

- A tall plant may be taken in sections laid in several successive sheets. Cf. Senecio no. 13, 180. Plants must be studied in the field, not merely collected; in order that collecting may be significant, that collecting may be really illustrative of field work. Pieces of plants broken off at random do not represent collecting.

Intelligent and critical observations with real objects in view should be the student's aim, not as I say, merely to collect, but to study plants should be the things held in mind.

* My remarks to Ralph Hopping at Three Rivers. He is thinking of collecting plants.

- Cont. from p. 171. Mimulus ^{whitneyi Gray} ~~occidentalis Gray~~ Longdon. Det. A. L. G.

- Cont. from p. 169. no. 964. Mentzelia congesta J. & G. Old Whitney Creek = Volcano Creek.

-Cont. no. 927. This lupine is the
var. *depressus* Jepson of *L. breweri* Gray.
It went to C. P. Smith, in my loan
to him, and he published it as
var. *bryoides* ^{C. P. Smith}. He did not know of
my name.

-Brandegee, K., Mrs. B. gave up her life
to the gratification of animosities. It
would be better to put it in this
way. She devoted her life to attack-
ing the work or activities of
other botanists, or pseudo-botanists as
she called them. She got her satisfactions and pleasure
in life from doing this. She did
it whole-heartedly and enthusia-
stically. Naturally she did it very
effectively in a way, at least so
as to hurt as much as possible
and create as much publicity
as possible. Such a policy nat-
urally led to antagonisms
and hatreds. Her hatreds were
deep, lingering and venomous;
they had the full essence of
malignity.

To be collected:

Sillaria juncaris, No. 601, lower fl.

not
indexed
p. 192 -
to 200

- Taxonomic practice. It astonishes me very much to see that Underwood in his "Our Native Ferns" manual has copied the diagnoses from Bot. Cal. and from Eaton's other writings, especially from Bot. Cal., without change or very little change. His mind was centered on nomenclature, on name changes, new species and so on; instead of trying to present better diagnoses in the presence of more abundant material. - Feb. 11, 1922.

- Heller, A. A. Seems very "force and bloodthirsty" in his publications but in person is as gentle and kindly and friendly a person as one may meet in many a day. See, however, Robinson's opinion of his irregularities in publication.

in Syn. Fl. 1st: 274. If I remember
rightly there is a character in
Lewis Carroll's that illustrates A.
A. Heller. Books

- Cont. from bottom p. 200,

Mary Austin, dressed in trousers,
turned in the saddle and
called back, "I knew you
thought I was a boy!"

[Bullfrog Lake camp to Kearsarge
Pass. Cont. from p. 109 ante.

It was bitter cold when we turned out
at 4:30 in the morning, to make
ready to cross the Sierran axis
that day. The wind blew not strong
but cold, and the mules in the
meadow in front of us stood with their
tails turned to the wind. We find the
water frozen in camp utensils, but start
a fire and get our breakfast. Then
we break camp, saddle and pack our
mules and get off on the trail from
Bullfrog Lake to Kearsarge Pass. We
start up the zig-zag. About half-way
up I look up into the pass, sharp
as a knife edge in the brilliant
morning air; when suddenly a ^{pack} mule
sticks his head over the edge! It
is as if he used his jaw for lever-
age to pull up his loaded body
and clamber over the edge. After
a bit another mule did the same
and followed the first down the

Zig-zag. Then a horseman came over. Then another pack mule; then two more horsemen. Down the trail they came, moving rapidly. Our animals were moved out to one side of the trail to let the little ^(For this is the unwritten law of the trail.) train go by. As they came nearer

I noticed the rider on the first horse was petit; and as the party came nearer still, the first rider called to us: "Please put your plant press out of sight. That is Mr. Austin back there and if he sees your plant press we shan't get to Bullfrog Lake today!" It was Mary Austin, author ^{to be} of the Land of Little Rain! They stopped and we held high cover ^{and lost borders.} on the trail. A

grand colloquy of the mountains, the deserts, the alpine flowers.

And then they went ^{on the zig-zag of the} swinging down the trail. But as they went (Cont. p. 298).

